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A National Newspaper for Every Branch of the Industry

Automotive Daily News

★CARS★ SHOP EQUIPMENT TRUCKS ★★AVIATION★★ PARTS ACCESSORIES ★TIRES★

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MACHINE SHOP PARTS JOBBERS' HOPE

TRAFFIC PROBLEMS RETARD CAR SALES IN BIG CITIES

By FRANCIS P. DAILY

WASHINGTON, April 11.—Lack of highway facilities has retarded the sale of automobiles, notably in New York, Chicago, Philadelphia and Boston.

The cost of traffic congestion is estimated at $81,000 a day in Boston, was $600,000 a day in Chicago prior to the inauguration of the regional improvement program, and is estimated at $1,000,000 a day in New York city.

These facts were disclosed today by the traffic committee of the American Road Builders' Association, which recommends regional planning as the ultimate solution of traffic congestion.

Results of the committee's study were made public by Dan R. Lamson, committee engineer, showing

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French Duty Change Hits Larger Cars

Special from A. D. N. Washington Bureau

Washington, April 11.—The tariff committee of the French Chamber of Deputies has reported the bills proposing to change the import duties on motor vehicles from an ad valorem to a specific duty, the Department of Commerce was informed by cable today from Automotive Trade Commissioner Finger at Paris.

The proposals, which are intended to impose a large increase on American and other automotive vehicles, now await action by the Chamber of Deputies. The present duty of 45 per cent. ad valorem, if changed to specific duties, according to weights, will impose as much as a 50 per cent. increase.

Among the rates proposed by the committee are the following:—

On complete passenger cars:

Weight each	Francs per 100 kilos
Up to 1100 kilos	800
1100—1500 "	925
1500—1750 "	1,050
1750—2000 "	1,275
Over 2000 "	1,500

The rates on complete passenger cars proposed in the original bills were as follows:—

On complete passenger cars:

Weight each	Francs per 100 kilos
Up to 950 kilos	850
950—1300 "	925
1300—1500 "	1,100
1500—1850 "	1,300
Over 1850 "	1,750

On trucks, in place of the original proposed rates of 750 francs per 100 kilos, rates of 625 francs per 100 kilos on trucks weighing each not over 1,175 kilos and 700 francs per

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1929 Gas Tax Total in U. S. $431,636,454

Washington, April 11.—The forty-eight states and the District of Columbia collected $431,636,454 in taxes on the sale of 13,400,180,062 gallons of motor fuel in 1929, reports received by the Bureau of Public Roads of the United States Department of Agriculture show.

This includes a twelve-month collection in forty-six states and the District of Columbia, a five-month collection in Illinois, and the collections of eight months in New York. Illinois and New York were the last states to adopt this method for part payment of the highway bill.

The average fee per gallon was 3.22 cents, as against 3 cents in 1928. In the course of the year twenty states

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SURVEY OF PHILADELPHIA TRADE SHOWS MECHANICAL DEPARTMENT INDISPENSABLE

Hand-to-Mouth Buying by Jobber Customers Has Become Generally Fixed Policy, It Is Indicated

By K. H. LANSING

PHILADELPHIA, April 11.—Jobbers of replacement parts, shop equipment and general automotive supplies in the Philadelphia territory, confronting certain new tendencies, trends and conditions, for some time have been making readjustments of one kind and another to meet the situation as it stands today.

Competition is keener on all sides than formerly, some of the larger oil companies and big tire concerns performing functions which but a short time ago were almost wholly in the hands of the jobbers. Accessory retailers and most car distributors and dealers have ceased to order accessory items from the jobbers to the extent prevailing only two or three years ago, the reasons for which are obvious.

Hand-to-mouth buying on the part of several classifications of jobbers' customers apparently has become a fixed policy. Manufacturers' warehouses, it is claimed, have made inroads upon the jobbers' volume of sales. And then, added to these factors in the situation, there has been the recent business hesitancy prevalent in virtually all lines of industry, with considerable credit among customers none too good.

To hold their place in the distribution system, the jobbers have found it expedient, in most cases, to make an individual survey of their own business, after having taken a bird's-eye view of the general automotive trade situation.

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385 GRADE CROSSINGS ELIMINATED IN 1929

Washington, April 11.—A total of 385 railroad grade crossings were eliminated in 1929, the Bureau of Public Roads announced today.

Stewart Introduces New 1¼-Ton Truck in 2 Models

BUFFALO, N. Y., April 11.—The Stewart Motor Corporation announces the production, effective at once, of a new 1¼ ton called Model 16A in the four-cylinder and Model 16XA in the six-cylinder. List price of both chassis $1,195.

The truck type four-cylinder engine has a bore of 3¾ inches and a stroke of five inches. The pistons are made of fine gray cast iron. The crank shaft is 2¼ inches in diameter, with large crank shaft bearings. The motor is equipped with timing gears, also water pump. Oiling system is of the force feed type. The motor is equipped with Stromberg carburetor, Delco-Remy Battery ignition, also Delco-Remy generator and starter. This four-cylinder motor develops forty-two horse power at 2 200 r. p. m.

The six-cylinder engine has a bore of 2⅞ inches and a 4¾-inch stroke. It develops fifty-five hours power at 2,600 r. p. m. It is of the L-head type of cylinders and has a removable cylinder head. It is equiped with timing gears, engine driven generator, water pump. Oiling system is of the force feed type with a gear driven oil pump. Pistons are of the fine grade cast iron, fitted with four piston rings.

A heavy duty truck type four-speed transmission is standard equipment and is of the unit power plant type volting direct to the flywheel housing of the motor. The main transmission shaft is 1½ inches in diameter and is supported on annular ball bearings. Large sized gears are used and are made of a high grade alloy steel heat treated.

There are five types of Stewart factory built bodies for this model: Panel, covered express, open express, stake, farm and a closed cab.

DIVERSION OF GAS TAX FROM ROADS OPPOSED

Special from A. D. N. Washington Bureau

New York, April 11.—Opposition to the practices in some states of diverting gasoline tax funds to purposes other than highway construction and maintenance, as expressed editorially by Automotive Daily News, was voiced in a resolution adopted at the annual meeting here of the American Motorists' Association.

"All gasoline taxes, derived from motor vehicles," the resolution declares, "should be devoted exclusively to the purpose of highway construction and maintenance and to no other purposes."

Resolutions indorsing the Federal government's $125,000,000 Federal-aid program, Senator Tasker L. Oddie's bill for the ultimate elimination of toll bridge franchises on Federal-aid highways, and for the speeding up of the Federal and state governments' programs for elimination of grade crossings were unanimously adopted by the association.

J. Borton Weeks, head of the Keystone Automobile Club, was re-elected president of the A. M. A.

General Motors Accounts For 28.13% of All Cars

NEW YORK, April 11.—According to a compilation of the official state automobile registration figures at the close of 1929 the total number of passenger cars in use in the United States was 22,599,701, of which 6,356,901, or 28.1 per cent., were of General Motors manufacture, according to announcement today by Alfred P. Sloan, Jr., president of the corporation.

"In this connection," said Mr. Sloan, "and as emphasizing the growth of the industry, it is interesting to note that ten years ago there were only 6,471,000 passenger cars of all makes in use in this country.

"The marked increase in the number of people who have turned to General Motors for their transportation equipment is not only gratifying within itself, but is especially significant as indicating the future trend of our replacement business, because there is a very definite tendency on the part of motorists to lean toward the same make of product with which they have had satisfactory experience in the past.

"A maximum realization of this opportunity, however, can be attained only through a proper recognition of the importance of service.

"The typical new car customer is buying, not his first car, but his third or fourth car. He is becoming more and more sophisticated, and word of mouth advertising, based

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Motor Stocks Now Priced To Give Liberal Yields

NEW YORK, April 11.—With the investing public showing a revival of interest in the common stocks of the automotive industry, many brokerage offices have compiled statistics on the yields available on the leading dividend-paying shares of the various motor manufacturing groups.

These compilations reveal that an investment equally in eleven dividend-paying passenger car manufacturing companies would return to the investor an average yield of 5.5 per cent. in cash, plus stock extras in the case of Auburn Automobile Company.

The Auburn company, however, returns the smallest cash yield at the current market price of its stock. The company pays $4 a share, and the price is around $260, giving a return of 1.6 per cent. Added to this, however, is an 8 per cent. stock dividend that would be worth $20.80 on each share held. This makes the dividend equal to approximately $25 a share, or about 10 per cent.

Among the higher cash yields at the present are those of Nash, Studebaker and Willys-Overland. Nash, at around $51 a share, yields 11.8 per cent on its $6 dividend. There had been some doubts about this payment until the directors yesterday declared the regular quarterly payment of $1.50, at which news the stock advanced to higher levels, thus reducing the yield to some extent.

Studebaker, selling at around $42 a share, pays $5, for a yield of 11.9 per cent., while Willys-Overland, priced at around $10, pays $1.20 for a return of 12 per cent.

General Motors at around $53 a share returns 5.7 per cent. to the investor through its common dividend of $3 a share. Hudson, priced at around $56, pays $5, for a yield of 8.9 per cent. Packard's $1 dividend rate returns 4.5 at the present price around $22 a share, while Chrysler at $41 and a $3 dividend returns 7.3 per cent.

One share of each of the eleven dividend paying passenger car stocks

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All offices of the Automotive Daily News will be closed all day on Saturday, April to September, inclusive.

WHEELS INCORPORATED DEMONSTRATES NEW SERVICE EQUIPMENT

New York, April 11.—Three new, highly specialized devices for servicing automobiles won the approval of a group of service executives, representing the local agencies of nearly all makes of domestic cars, at a demonstration held by Wheels, Inc., 835 11th Ave.

Two of the machines represent advances in their respective fields. The third contraption, a rideograph, just brought out by the Riehle Brothers, is unique in its purpose, which is to test accurately the riding qualities of a car and automatically shoot such troubles as springs too easily flexed, or vice versa, or defective shock absorbers and like troubles.

The rideograph, it was explained to the service men, is in response to the steadily growing demand for ultra riding comfort. Buyers, particularly of higher priced cars, today are notoriously particular about the ability of a car to take rough roads easily.

An expert tester may, by driving a car, be able to tell what is causing hard riding. Or he may have to guess at it with resultant useless work, expense and no improvement. The rideograph is designed to eliminate that.

It is a comparatively simple machine and its operation requires little skill. One wheel of the car is raised a few inches from the ground. The rideograph cable is fastened to the fender and the car allowed to drop. The force of the drop and the rebound are measured by a pencil which automatically records it on a chart. In this manner the four wheels may be quickly and accurately tested.

Another instrument is the Carnegage, introduced by the Rim and Wheel Service. This is for use on axles which have been twisted, bent or had their kingpins thrown out of adjustment. It determines swiftly and with the greatest precision any disalignment and the extent of it. The check on the three points is made simultaneously. A Hunt hydraulic press is then used to correct the defect.

The third device is a burnisher for brake lining, perfected and produced by the Bendix Brake Company. New, or replaced, brake linings often bulge at the sides, causing a depression in the center. This is productive of squeaks and necessitates the primary adjustment, usually after it has been on the car for two weeks. The burnisher's purpose is to eradicate the high spots, making the primary adjustment unnecessary, and preventing squealing.

Two two latter pieces of equipment, being expensive, are designed only for places doing a great volume of brake and axle work, in which Wheels, Inc., specializes. The rideograph, however, is intended for every modern service station.

Among those who attended the demonstration were representatives of the Packard, Warren-Nash, Studebaker, Buick, Hudson, Stutz and Marmon motor car companies.

FOREIGN NOTABLES VISIT AIRCRAFT SHOW

Special from A. D. N. Detroit Bureau

Detroit, April 11.—Attendance at the aircraft show in this city is well over the 100,000 mark and all records are expected to be smashed by the end of the week.

Several foreign visitors were present today, including F. Bupch de Parada, former Mexican ambassador to Germany; C. Buch de Parada, Dr. Carl Maybeach, noted German engine designer, and W. T. Maxwell, director of the Ontario government air service.

The register at the airport today showed 210 planes in the exposition hangar and on the field, believed to be the largest number of commercial airplanes ever assembled in this country. Airport attendants have recorded more than 1,500 landings so far.

Considerable attention is being given to gliders and there have been many gliding demonstrations and sales are brisk in this section.

GAS TAX RECEIPTS REACH HUGE TOTAL

(Continued from Page 1)

increased the rate of taxation either 1 or 2 cents. The highest tax per gallon was 6 cents; the lowest 2 cents. At the close of the year, three states had a 6-cent tax; eight a 5-cent tax; nineteen a 4-cent tax; one, Utah, a 3½-cent tax; ten a 3-cent tax, and seven states and the District of Columbia a 2-cent tax.

In 1929 the rate per gallon was increased 1 cent in Colorado, Florida, Indiana, Kansas, Minnesota, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, Vermont, Washington and Wyoming; 2-cent increases became effective in Georgia, Louisiana, Montana, Nebraska, Tennessee and Texas.

Comparison of the total number of vehicles registered in 1929 with the total tax collected and with the taxable gallonage in all states (except New York and Illinois) and in the District of Columbia shows an average tax revenue of $17.72 per vehicle and an average purchase of 532 gallons of gasoline.

After deducting collection costs, the entire net revenue in thirty-four states was used for construction and maintenance of rural roads. In the other fourteen states and the District of Columbia a total of $24,405,207 was used for other purposes. In three states part of the tax money helped support public schools. In eight states, a part of the revenue went to cities for repair and improvement of streets, as did the entire collection for the District of Columbia. In six states small sums were deposited in general funds; in Mississippi a special extra tax was collected in two counties for sea wall protection of highways, and in New Jersey a small fraction of the receipts was turned over to the Department of Commerce and Navigation.

Of the revenue applied to rural roads, and the remainder, $23,371,785 struction and maintenance of state highways; $85,113,708 for construction and maintenance of local roads and the remainder, $23,371, applied as payments on state and county road bonds .

DAWSON NAMED DETROIT DEALER FOR CHEVROLET

Detroit, April 11.—Hanley Dawson, one of the best known retail men in Detroit and a dealer here for nearly twenty years, will open his doors at 3d and Hancock Avenues Monday morning as a Chevrolet dealer.

Mr. Dawson has the reputation of having sold more automobiles in Detroit than any other dealer and has established a sales record over a long period of years that compares favorably with any in the country. Announcement of Mr. Dawson's appointment was made today by H. B. Hatch, Detroit zone manager of the Chevrolet Motor Company.

TRAFFIC CONGESTION RETARDS CAR SALES IN LARGER CENTERS

(Continued from Page 1)

the principal causes of traffic congestion to be as follows:—

1. Highway registration (local vehicles).
2. Outside registration using highways in the area.
3. Lack of parking restrictions.
4. Narrow and poorly planned highway systems.
5. Lack of adequate entrances and exits to cities.
6. The larger cities geographically hemmed in by waterways.

Thirty miles from the heart of the central city of a regional area is the maximum distance of local influence. The New York area, even, could be included within these limits. This distance scales down some ten miles around the smaller cities.

In the Cleveland area only 1½ per cent. of the passenger car traffic on the through trunk highways crosses the regional area between outside points. Over 95 per cent. of the daily passenger car traffic entering or leaving the city does not travel beyond the regional area limits, thirty miles from the center of Cleveland.

Per capita comparisons of registration figures in New York, Chicago, Philadelphia and Boston were made with such cities as Detroit and Los Angeles, which have an abundance of wide exits and high-speed arteries. Using the Detroit ratio of 3.5 persons to the automobile, the four former cities should have a total increase in registration of 1,950,000 automobiles, but they do not.

That a model regional planning organization be drawn up for use of smaller cities; that state legislatures authorize and control regional planning in congested areas; that equitable methods of financing, planning and construction be studied and recommended.

That in locating highways state highway departments build trunk lines around cities; that a minimum right-of-way width be adopted of 100 feet for primary and secondary trunk lines, and of 66 feet with a two-lane roadway for rural roads.

That the authority for the location of grade crossings should be vested in the state highway commission or some state public utility commission.

That immediate financing and construction are favored of specific projects in regional areas as recommended by the commission in charge.

That state and county highways having an average daily present traffic in excess of 4,000 vehicles shall be designed with more than two traffic lanes of pavement; those with between 1,200 and 4,000 vehicles, not more than 10 per cent. of which is truck traffic, to have two traffic lanes, generally paved; roads with less than 1,200 vehicles daily, not more than 10 per cent. truck traffic, shall have two traffic lanes with some type of all-weather surfacing.

FRANCE ANNOUNCES NEW TARIFF RATES

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100 kilos for heavier trucks are proposed.

For bodies (presumably passenger car bodies), in place of the original proposed 1,100 francs per 100 kilos, the committee now proposes 800 francs per 100 kilos.

The principal changes from the original proposed rates on automobile parts (which are now also dutiable for the most part at 45 per cent. ad valorem) are:

For motors weighing up to 200 kilos each, 850 francs per 100 kilos, and for heavier motors 1,000 francs per 100 kilos in place of the originally proposed rates of 1,300 and 1,650 francs per 100 kilos on motors weighing each up to and over 230 kilos, respectively.

On chassis frames, 500 francs per 100 kilos, in place of the originally proposed rate of 1,100, and on axles 750 francs per 100 kilos in place of the original proposal of 1,000.

WARD LA FRANCE ADDS NEW BUSTRUK MODEL

Elmira, N. Y., April 11.—Ward La France Truck Corporation today announces a new Model 25B, known as the Bustruk chassis, with a total gross rating of 13,000 pounds. The new model is powered by an eight-cylinder engine developing 110 horse power. While Ward-La France trucks are custom built, the company claims to have a valuable sales proposition open for a limited number of truck dealers.

SPARKS from DETROIT

Wilkins Lauds Engineers

That S. A. E. Meeting

Michigan Business

Fred Kingsbury—Detroit Editor

SIR HUBERT WILKINS, well-known explorer of the arctic and antarctic regions, who returned from the antarctic about ten days ago, paid a tribute to automobile engineers the other night in a short address at the aircraft banquet of the Society of Automotive Engineers. He said the automobile engineers were responsible for the rapid development of the aircraft engines which had made possible great exploration trips and that he never had any fear when making long flights over barren ice packs where it would be impossible to land if anything happened.

Sir Hubert has been going either into the arctic or antarctic once every year since 1925 and plans another trip the coming year.

* * *

THE Society of Automotive Engineers is going to have a wonder meeting at French Lick Springs on May 25. It will be the twenty-fifth anniversary of the organization and the society plans to make it a gala occasion.

F. H. Faurote of the society, who had been working hard for several months on the plans, gave me an outline the other day of what is going to happen. Just at present he does not want me to say anything about it, but, in a few days, I expect to spring the surprise.

The S. A. E. has been a mighty factor in the development of the automobile to its high state of efficiency. The engineers who are members of the organization have not locked their laboratory doors on each other. In fact, they have discussed in open meetings just what they are doing and what they have accomplished, and this exchange of views and working knowledge has had a wonderful effect on motor car development.

* * *

L. M. Woolson, who had charge of the development of the Packard Diesel aircraft engine, kept his audience chuckling the other night when, following his description of the engine, he started to answer questions that had been written on cards by the audience.

* * *

THE current issue of the Michigan Graphic, published by the First National Bank in Detroit, has the following to say regarding business conditions in the state:—

"General activity in Michigan continues on a level lower than a year ago, and about the same as during the initial months of 1928. Building activity remains on extremely low levels; bank clearings, cement production and manufacturing activity continue considerably below last year, and motor vehicle production is being rather closely matched with sales, which remain low. The activity of the public utility industry alone remains equal to last year's attainment."

There you have a picture of conditions in Michigan as seen by one of its largest banking institutions.

MOTOR TRUCKS AID FRUIT AND VEGETABLE SALES

Washington, April 11.—Motor trucks are effecting big savings in moving perishable fruits and vegetables, according to a recent series of reports by the United States Department of Agriculture. Motor trucks are moving 65 per cent. of the fruit in southern Indiana, 23 per cent. in southern Illinois, 53 per cent. in Virginia and 16 per cent. in Delaware and Maryland.

BROWN-LIPE GEAR WORKS NIGHTS TO CATCH ORDERS

Syracuse, N. Y., April 11.—Production at the Brown-Lipe Gear plant of the Spicer Manufacturing Corporation in Syracuse continues at a high level, with a night shift of workers employed, due to a heavy demand for truck and bus transmissions, which began to increase in a marked degree in February.

Charles A. Dana, president of the Spicer Company, visiting the Syracuse plant, said in response to an inquiry concerning the company's business, that truck and bus business was excellent.

CADILLAC V-16 WILL FEATURE SHOW TODAY

Detroit, April 11. — "Tomorrow Cadillac-La Salle dealers all over the country will formally open the spring showing of Cadillac's full line of motor cars, with the new sixteen-cylinder Cadillac as a special feature," says Lawrence P. Fisher, president of Cadillac Motor Car Company.

"Although the V-16 will be the feature of this showing, honors will be shared by the La Salle V-8 and the Cadillac V-8, which will be presented in the most advanced body styles of Fisher and Fleetwood."

A. I. PHILP OF DURANT SEES BUSINESS GAIN

Wichita, Kan., April 11.—A. I. Philp, chairman of the board of Durant factory at Lansing, Mich., was the guest of E. J. Rodda, Durant distributor at Wichita, recently.

Business conditions throughout the country have improved greatly during the past few weeks, Philp declared. He said the business peak will come in the second quarter of the present year.

General Motors Passenger Cars In Use Equal 28.13% of Total

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on first-hand experience, overshadows the sales solicitation and the power of the printed word.

"To whatever degree the product of a manufacturer attains wide distribution, to that degree service becomes increasingly important.

"It is in recognition of this principle that our passenger car divisions, in collaboration with General Motors dealers, have recently inaugurated certain changes in service policies which, although revolutionary in comparison with the past practices of the industry, are designed in line with our recognition of this fundamental principle."

Following is a tabulation showing the total number of passenger cars registered in this country at the close of each of the past six years, with the number and percentage of General Motors cars also shown:

Date	Total Passenger Cars	General Motors Passenger Cars	Percent General Motors
December 31, 1924	15,350,038	2,697,272	17.57%
December 31, 1925	16,887,250	3,041,615	18.01%
December 31, 1926	18,915,260	3,741,984	19.78%
December 31, 1927	19,410,175	4,483,521	23.09%
December 31, 1928	20,673,852	5,412,265	26.18%
December 31, 1929	22,599,701	6,356,901	28.13%

MERCHANDISING ACCESSORIES EQUIPMENT

WHOLESALE

DISTRIBUTION SHOP EQUIPMENT REPLACEMENTS

BURD PISTON RING USES AIRPLANE TO CONTACT JOBBERS

ROCKFORD, ILL., April 11.—R. W. Bergstrom, special piston ring sales representative of the Burd Piston Ring Company, in a Mercury plane piloted by Bert Hassell and equipped with Burd piston rings, has just completed a ten-day sales campaign over the southern territory of the company. Herbert Sierk, district representative of the Burd Piston Ring Company in Dallas and surrounding territory, planned a trip for Mr. Bergstrom to include all of the company's jobbers in Texas and points north to Rockford, including Tulsa, Oklahoma City, Kansas City, Des Moines and Cedar Rapids.

At the various points arrangements had been made by wire advising the jobbers that he would be in at a certain hour and spend a half day with each one. "The publicity secured in the local press at the various points stopped for Burd piston rings was most satisfactory," says Mr. Bergstrom.

The use of the airplane is undoubtedly going to be a big factor in future sales campaigns. The wide open stretches of territory in the South and Southwest that were covered in this trip could not have been covered in less than two weeks' time with far less results than were secured in this four-day trip.

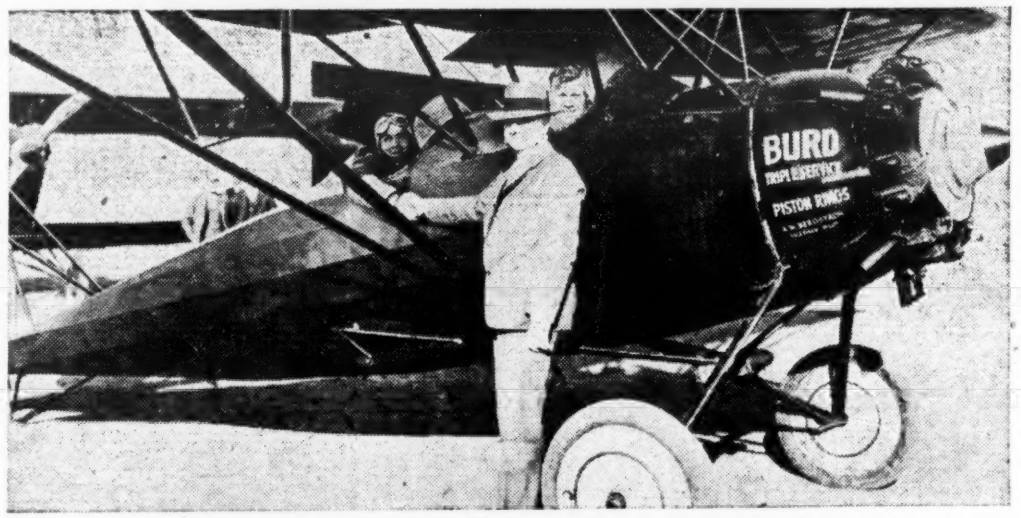
F. M. White, president of the company, has stated that no definite future sales plan incorporating the use of an airplane has been made until a summary of the results of this trip can be secured.

In addition to a most aggressive sales campaign on Burd rings, manufactured by a company that has been in this business since 1914, plans are announced for a $25,000 addition to the Burd factory. This building is 64x129 feet; part of it is one story, and the balance two stories high. It is of brick and steel construction throughout and is built so that future additions can be added easily. The HaDees Heater manufactured by the Liberty Foundries Company, a division of the Burd Piston Ring Company, will occupy a portion of this addition.

ADDS NEW LINES

Camden, N. J., April 11.—Parts Service Company of this city has added Fostoria fenders, Spiro running boards and Berkley brake drums to its lines of automotive parts.

Cuts Two Weeks' Trip to Four Days by Plane



ABOVE is shown the Mercury plane used by the Burd Piston Ring Company in its special sales campaign

Editor's Column

IN the past few months there have been jobbers holding gatherings in an effort to determine just how they can best solve their problems, such as exclusive distribution, holding of territories and sufficient discounts to compete with chain stores.

Many are in favor of co-operating in buying, or in other words, mass buying, in an attempt to secure better prices from the manufacturers, and there are just as many who do not believe that this will solve the problem, especially when it comes to chain-store competition.

They know that the chain store can sell cheap because it buys at rock-bottom prices, and if they are able, through their co-operative methods, to buy on the same footing as do the chain stores, they still have to give service, which the chain store doesn't, and this service costs plenty.

Because of this condition, jobbers have started to advertise, where they didn't spend a penny in former years, to teach the public that the best place to buy automotive supplies is from the dealer or service station where they can get service. Others have put in machine shops to make their profits stand up despite lower volume of parts and accessory sales; others have increased their service to dealers to give quicker delivery. There have been all kinds of attempts to stave off decreasing profits, with more or less success, depending upon the jobber, his territory and the strength of his competition.

But there has been one bad feature that looks like one of those problems that cannot be solved to the satisfaction of all jobbers in the one territory. In a medium sized city in the east there are five recognized reliable jobbers. When business was real good, before the chain stores with their cut rates and no service started business in their territory, they went along serenely with no thought of the future and what it held for them.

Three of these five jobbers were in the accessory business and two parts and equipment. When business started to slow up, due to car manufacturers' equipping their cars more fully, the accessory men went into the parts business and the two parts men and one of the accessory-parts jobbers opened machine shops.

This all happened a year ago. Today there are only four jobbers in that territory, one having folded his tent, and three of them maintain machine shops, splitting profits and generally acting as do competing chain stores, cutting prices.

What the solution will be is a hard one to answer. Independent retailers as well as the chain stores appear to be doing well, while in many localities jobbers report that business this year will be practically on a par with 1929. But bear in mind that these reports are on volume, not profits. To maintain volume jobbers have had to either extend their territory, take longer risks on credits or open branch stores. This means that they have increased their overhead to such an extent that they will probably have to increase their volume many fold to break even with past years when volume was less and profits more.

Wholesale Brevities

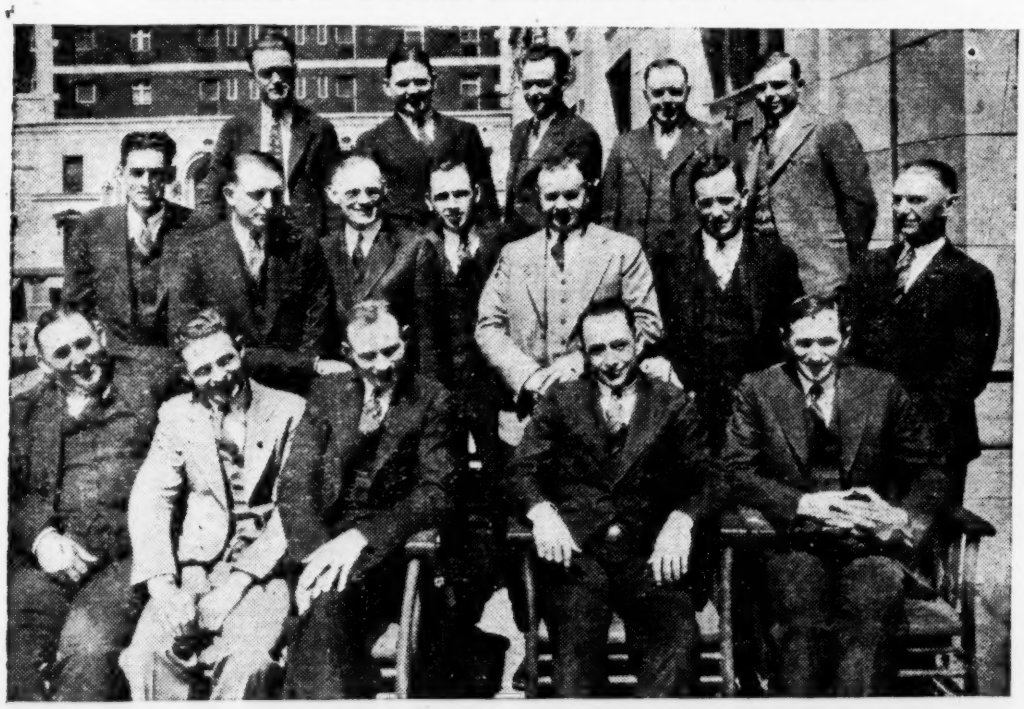
New York, April 11.—The General Products Company, 29 West 26th St., this city, has taken on the following lines and represents the respective manufacturers in this territory: Beneke Manufacturing Company, Chicago, Rayfield gasoline filters; Binghamton Woven Wire Company, Binghamton, N. Y., tow cables, luggage carriers; International Stamping Company, Hartford, Wis., mufflers; Sterling Auto Products Company, Cicero, Ill., radiator caps, gas tank caps and wheel aligners.

Newark, N. J., April 11.—Robbins & Fuhs, Inc., to deal in automobile supplies, has been chartered with 110 shares no par. Ernest F. Robbins, Bound Brook, and Paul J. Fuhs and Elizabeth F. Fuhs, Morristown, are the directors.

Hartford, Conn., April 11.—The Fuller Battery Company, the pioneer battery station of this city, now controling the distribution of the Willard battery here, in New Haven and Providence, has become Seiberling distributor in this territory. The business will be handled from the local station at 410 Ann St., where a number of changes have been made to carry tires.

Danville, Ill., April 11.—Three hundred owners, mechanics and repair men from a score of towns in this territory attended a two-day clinic and service demonstration in the E. B. Collins wholesale house, 216 West Main St. R. E. Rourk, comptroller of the Automotive Equipment Association, was principal speaker. Representatives from thirty-seven auto accessory and repair supply houses had exhibits and assisted in the event.

Gabriel's Texas Distributors Gather



The annual spring sales convention meetings of the Gabriel Company, Cleveland, O., have been taking place throughout the country during the past few weeks. The meetings have been held under the direction of J. H. Shoemaker, vice-president and sales manager, and L. W. Klein.

The above photograph shows a group of distributors who recently met together at Dallas, Tex. This picture is typical of the groups throughout the country which are gathering together to study Gabriel's new products and prepare to carry out the selling plans for 1930.

Plans for this year call for the most aggressive campaign of advertising and merchandising in the history of the company, according to George H. Ralls, president.

The company has just announced the change of its name from the Gabriel Snubber Manufacturing Company to the Gabriel company.

"THE Whippet Four has been for years one of the outstanding values, and in our case it is our overhead carrier. The new Willys Six is the best product we have ever had, and our sales are going over big."

—Jacobson-Gordon, Inc.
Homestead-Munhall, Pa.

Write or wire for franchise details

WILLYS-OVERLAND, Inc.
TOLEDO, OHIO

WILLYS-OVERLAND SALES CO., LTD., TORONTO, CAN.

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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O. J. Elder, President. H. A. Tarantous, Vice-President. Alexander Johnston, Secretary.

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ADVERTISING AND BUSINESS HEADQUARTERS
2716 Graybar Bldg., New York, N. Y. Telephone LEXington 6353
Harry A. Tarantous, Business Manager. J. Edward Schipper, Eastern Manager. George M. Slocum, Manager Detroit Bureau, 427-8 Fisher Building, Detroit, Mich., phone Empire 3500; Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill., phone Central 5936; Metz B. Hayes, New England Manager, Little Building, Boston, Mass.; Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash. Address ALL advertising and business correspondence to 2716 Graybar Building, New York City.

EDITORIAL DEPARTMENT
350 Hudson St., New York, N. Y. Telephone CANal 1060
Alexander Johnston, Editor. William C. Callahan, News Editor.
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Chain Store Competition

ONE of the subjects of prime interest to merchants in this country at the present time is the growing competition they are encountering from the so-called chain store systems. This modern phenomenon is not confined to the automotive industry; indeed chain store competition is much less vigorous in the automobile field than it is in some others. Nevertheless the chains are getting into our field and this newspaper some time ago promoted a survey to get the opinions of independent dealers as to how far chain competition was reaching and what possible methods of combating it they had found.

We found that in some cities, chain store systems have seriously affected the sales of independent dealers. In other places this class of competition has not yet, at any rate, made any appreciable inroads on ordinary business.

The interesting fact disclosed by this survey, however, is the general agreement among independent dealers that the most effective way of combating the development of the chains is through service. The Automotive Daily News has pointed out this outstanding fact on numerous occasions. Chain stores by reason of merged buying power have a certain advantage over independent merchants. They may very likely offer lower prices for certain classes of merchandise. This is bound to attract the class of customer who buys on the basis of price alone.

However, the independent merchant has the advantage over the chain store of being able to offer service that the latter cannot hope to equal. Personality counts in business exactly as it does in other phases of life. The man who develops his service along individualistic lines has something to offer which will get and keep customers who want something beyond mere low first cost. In one way, the coming of the chain may be a benefit to the automotive trade, in that it will tend to force the development of service and maintain it at a high level of efficiency.

Time Payments Abroad

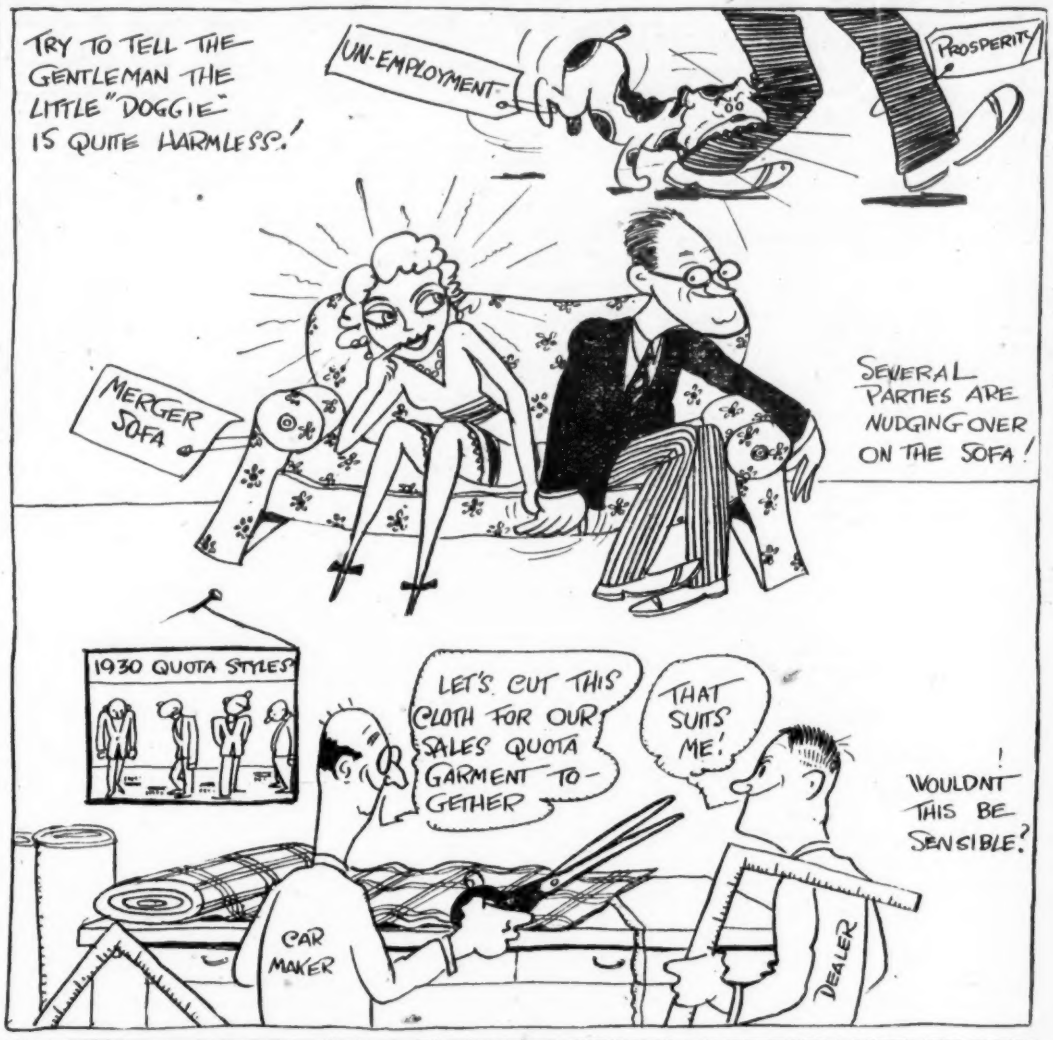
IN a recent bulletin from the Department of Commerce there is given some very interesting data regarding the spread of installment buying of motor vehicles in foreign countries. This phase of car buying is of comparatively recent development in other countries, but evidently the idea is catching on with a vengeance.

In Australia and New Zealand 75 per cent. of all sales are made on the time payment plan. In British Malaya, the Philippines deferred payment business runs about 95 per cent. of the total. British India and the Dutch East Indies do about 60 per cent. of the buying on time. Japan and most of the Oriental countries resort to time for about half their sales. The department remarks on the fact that repossessions in all these countries are comparatively low, as a matter of fact running less than 1 per cent. in most of them.

In Europe, deferred payment sales are developing rapidly. Most of the British dealers offer time payments on their lines. In Europe there is a tendency to give longer periods for payment than we do in this country. Two years is not excessive for conclusion of a deferred payment sale.

This matter of time sales is one of prime importance in the development of our export markets. The sooner that the world in general gets this typically American idea firmly fixed in its collective head the better for sales in overseas markets. It is time payment that has given us the tremendous volume that we have reached in this country.

Here and There in the Tra de Headlines— By MacConachie


TRY TO TELL THE GENTLEMAN THE LITTLE "DOGGIE" IS QUITE HARMLESS!
UN-EMPLOYMENT
PROSPERITY
MERGER SOFA
SEVERAL PARTIES ARE NUDGING OVER ON THE SOFA!
1930 QUOTA STYLES
LET'S CUT THIS CLOTH FOR OUR SALES QUOTA GARMENT TO-GETHER
THAT SUITS ME!
WOULDNT THIS BE SENSIBLE?
CAR MAKER
DEALER

Ask Us To Tell You—

IN presenting this service department, The Automotive Daily News is actuated by the desire to help its readers solve their problems, whether these are merchandising, technical or in the field of general automotive information. We shall be glad to have our readers ask us any questions pertaining to the automotive field.

In some instances readers may desire information which will require an expenditure of money to secure, and in such cases we shall be glad to get the desired data at the least possible cost, or we shall inform our readers where they may obtain it most economically and expeditiously.

In cases where the reader desires an immediate reply, we would suggest that he inclose a self-addressed and stamped envelope. Other inquiries will be printed in the paper from day to day in the order in which they are received.

BOHANNON SALES PLAN

Editor Automotive Daily News:—In looking over the Automotive Daily News of March 22nd, I took particular notice of your interview with Mr. J. A. Bohannon, president of the Peerless Motor Car Corporation, in which he gave a solution which would undoubtedly help increase the sale of motor cars. He suggests that the people interested in the automotive industry should purchase new cars so as to increase the sales.

In the issue of March 25th, page four, under the heading "Sales Should Begin at Home," it was stated if suppliers of automobile parts, which would include lumber, rubber, glass, fabric, etc., would purchase more automobiles it would bring about an increase in the production in the automobile factories.

There is still another solution beyond the purchase of automobiles, we believe. In our opinion the automobile manufacturer is killing the proverbial "goose that lays the golden egg." When stating "sales should begin at home," why not state "purchases should begin at home." The sale of automobiles is created by the demand of the buying public and it is a well-known fact that states such as Michigan, Illinois, Wisconsin, Indiana, Ohio and New York are leaders in the consumption of automobiles. It is quite right that suppliers of materials that are used in the manufacture of automobiles should reciprocate and purchase more cars, which would necessarily bring about increased sales and better times. If this is what the manufacturers want vendors of materials to do, why do automobile manufacturers purchase body wood parts from Southern states where the consumption of automobiles is very small. By way of comparison, figures show that in some Southern states only one person out of every hundred is financially situated so that he can purchase a car, while in states such as Michigan, one person out of every five people is financially able to purchase a car.

I am going to list the advantages and disadvantages in purchasing from Southern states to show why the automobile manufacturer should purchase these commodities from states like Michigan.

Advantages:

1. Slightly lower prices.

Disadvantages:

1. A decrease in the sale of cars to workmen due to low wages and inefficient help.
2. Inferior workmanship due to inefficient help because of paying low wages. Use of Southern woods such as gum and soft maple, which every one knows in the automobile industry is inferior lumber.
3. Inferior workmanship and lumber increases rejection expense.
4. Increased cost of assembling due to inferior workmanship.
5. Production hold-ups due to rejections.
6. Production hold-ups due to the long distance that materials must travel in order to reach destination.
7. Length of time required to make engineering changes, which is due to the distance between the supplier and the customer and the fact that these companies cannot maintain an engineering staff such as the automobile companies have in Michigan for instance. Climatic and labor conditions make it very difficult for companies in the South to secure high class efficient engineers, as they would much rather work where the conditions are far better.
8. Increased inventory due to the length of time in transit and uncertain deliveries.

The items enumerated above give a more or less descriptive idea of why automobile manufacturers should remember that a few cents saved often times decreases their sales tenfold, by purchasing their materials in localities where the possibility of selling cars is very remote. If these companies expect the suppliers to reciprocate for the business that has been placed with them, the automobile manufacturer must remember that these companies must keep busy the year around in order to put their workmen in a position to buy more automobiles.

D. R. M., Michigan.

FINANCIAL RESPONSIBILITY LAW DEFINED IN JERSEY

Trenton, N. J., April 11.—The New Jersey automobile financial responsibility law of 1929 is not generally understood by the motorists of the state, according to a statement just issued by Harold G. Hoffman, state motor vehicle commissioner, and a campaign of education will be undertaken.

Many owners and drivers of motor vehicles, he said, believe that the law does not require proof of financial responsibility to pay future damages, except following accidents involving death, personal injury or property damage exceeding $100. Commissioner Hoffman points out that actually the provisions of the act apply after practically every violation of the motor vehicle and traffic laws, with the exception of illegal parking.

C. W. NASH COMPLETING TRIPS AROUND ENTIRE U. S.

Portland, Ore., April 11.—Charles W. Nash, president of the Nash Motors Company, stopped off in Portland recently on the final lap of a trip that has taken him around the entire country.

COMING EVENTS

APRIL

12-27—Milan, Italy. Italian International Automobile Show.
24-25—Cleveland, O. National Petroleum Association meeting.
28-May 3—Henderson, N. C. Automobile Show.

MAY

1-10—Melbourne, Australia. International Motor Show.
8—New York. Society of Automotive Engineers, aeronautic meeting.
23-27—Atlantic City, N. J. American Society for Testing Materials annual meeting.
25-29—French Lick Springs, Ind. Society of Automotive Engineers' summer meeting.
29-July 13—Posen, Poland. International Motor and Transport Show.
30—Indianapolis, Ind. Automobile Race.

JUNE

2-12—Paris, France. Automobile Salon.
16-25—London, England. Olympia Motor Show.

NOVEMBER

10-14—Cleveland, O. Motor and Equipment Association Show.
17-22—Cleveland, O. National Standard Parts Association Show.

DECEMBER

6-17—Brussels, Belgium. Automobile Exhibition.

Range of Automotive Stocks: Financial News

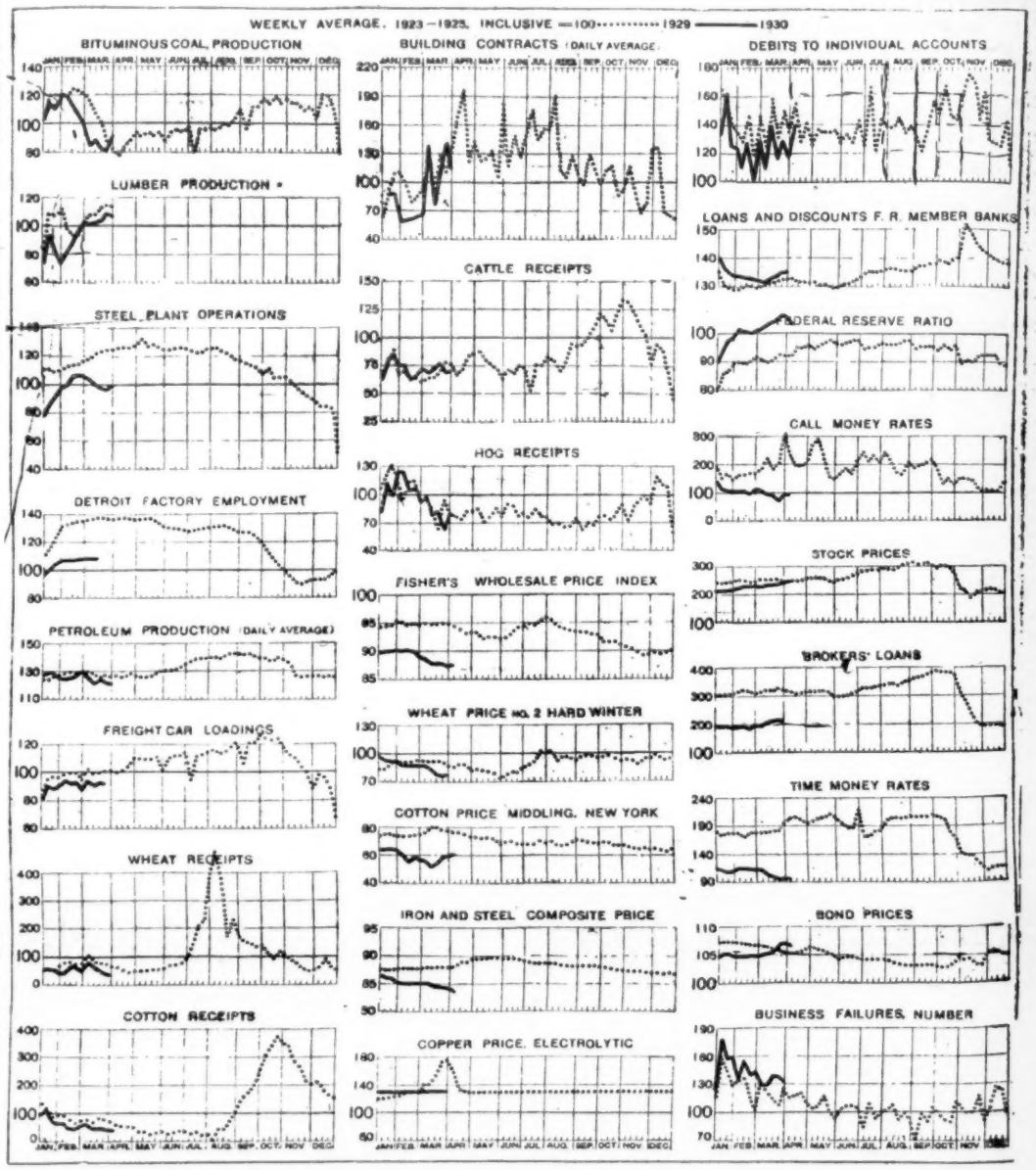
THURSDAY, APRIL 10

NEW YORK STOCK EXCHANGE

Previous 1929-1930 High	Low	Div.		Sales	High	Low	Close	Net Change
104⅞	7	....	Advance Rumely ...	4,700	21	20	20	....
119	15	....	do pf.	900	38⅞	37	37	— ¾
223⅜	77	3	Air Reduction	4,800	149⅝	145	146	— 3¼
11¼	1	....	Ajax Rubber	400	2¼	2⅛	2¼	+ ⅛
75½	35⅛	3	Allis Chalmers	8,200	66¾	66	66	....
76½	27	....	Am. Bosch Magneto	1,800	51⅜	49¼	50¾	— ⅛
69⅞	66	3	Amer. Chain	1,000	69⅞	66	66	....
8⅞	2	....	Am.-La France	300	3¼	3⅛	3⅛	— ¼
514	120	*4	Auburn	3,800	261¾	255	258¾	— ¾
104¾	25	2	Bendix Aviation ...	10,000	55¾	54⅝	54⅝	— ⅜
136¾	37	3	Bohn Aluminum ...	400	65⅜	63¾	63¾	— ¼
86⅞	26	4	Borg-Warner	3,600	48⅝	47½	48	....
63⅛	8½	....	Briggs Mfg. Co.	44,700	22⅜	21¼	21¾	— ⅛
43½	17⅝	2	Briggs & Stratton ..		No sales today			
73⅞	13	....	Brockway Motor ...		No sales today			
22¾	8¼	1	E. G. Budd Mfg. ...	1,000	14	13⅝	13¾	— ¼
14⅝	7¾	1	Budd Wheel	1,400	13¾	13¼	13¾	— ⅛
74	25	1.60	Bullard	8,700	69	67½	69	+ ⅝
77	40¼	*3	Caterpillar Tractor..	2,900	77⅜	75¾	75¾	— 1⅛
90¾	18	4.20	Checker Cab	6,100	58	56	56	— 1⅝
47½	20¾	....	Chicago Pneu. Tool .	2,700	34⅞	33¾	34	....
37	20⅞	3	Chicago Yellow Cab.	430	30	29½	30	+ ¼
135	26	3	Chrysler Corp.	113,800	42¾	41	42¼	+ ¾
61¾	25	3	Clark Equipment ...	100	37⅜	37⅜	37⅜	— ⅛
62⅝	18	2	Commercial Credit .	3,500	38½	37¾	38¼	— ⅛
105¾	70	6.50	do 6½s pf.	60	94	93	93	— 2
76	22⅛	†1.60	Comm'l Invest. Trust	800	48	47⅞	47⅞	....
100	87	6.50	do 6½s pf.	100	100	100	100	....
29⅝	5⅝	....	Continental Motors .	2,200	7⅛	7	7⅛	— ⅛
123¼	50	*3.50	Cutler-Hammer	1,300	87½	85½	87	+ 2⅛
231	80	*4	Du Pont	28,900	145¼	143¼	143¼	+ ⅜
76¾	18	3	Eaton Axle & Spring	600	34¼	33⅞	34⅛	+ ⅝
174	50	6	Electric Auto-Lite .	9,500	114½	112⅝	113⅝	+ 2⅛
104½	55	5	Electric Stor. Battery	800	75⅞	75½	75½	— ¼
22½	3¼	....	Emerson Brant A ...	200	5¼	5	5¼	— ¼
73¾	15	2.50	Evans Auto Load ...	800	24½	24⅛	24⅛	....
22⅝	5	.80	Federal Motors	100	11⅞	11¾	11¾	+ ⅛
9	7	.64	Fifth Avenue Bus....		No sales today			
37	24½	1.60	Firestone T. & R. ...	700	27¾	27½	27½	— ⅜
89⅝	79¾	6	do pf.	900	85½	85	85	— ½
20⅛	2⅛	....	Fisk Rubber	8,100	5⅛	4⅞	5	+ ⅛
72⅛	8	....	do 1st pf.		No sales today			
33⅞	5	....	Gabriel Company ...	1,000	11⅝	11⅜	11⅜	— ¼
25	3	....	Gardner Motor	700	6¼	6	6	....
94½	55¼	1.60	General Electric	177,000	95¼	92⅝	92½	— 1¼
91¾	33¼	*3	General Motors	217,400	54¼	52½	53½	+ ⅜
126½	112	7	do 7s pf.	200	123	123	123	+ ¼
64⅛	26	*2	Glidden Co.	5,800	36	35⅜	35½	+ ½
106⅛	95	7	do of		No sales today			
105¾	38¼	4	Goodrich	9,400	54	52	53⅛	— ¼
115⅛	95½	7	do pf.		No sales today			
154½	60	5	Goodyear T. & R. ..	4,800	95	91½	92½	+ 1⅜
104⅞	86	7	do pf.	200	101¾	101½	101¾	+ ¼
54	7⅜	....	Graham-Paige Motor	1,400	12	11⅝	11⅞	— ¼
63⅜	5½	....	Hayes Body	8,700	16⅜	15	15⅞	....
33½	21¼	1.80	Hercules Motor	500	28⅝	27	28⅝	+ 2¾
52⅞	13	2	Houdaille-Hershey B	5,700	28	27	27⅝	— ⅛
93½	38	5	Hudson Motor Car .	8,300	56¾	55⅛	55⅝	— ½
22	18	2	Hupp Motor Car ...	22,600	26½	25⅛	26¼	+ ⅞
32½	3½	....	Indian Motocycle ..	14,100	12	11	11⅛	— 1
14¼	2	....	Intercon. Rubber	100	6¼	6¼	6¼	....
142	65	2.50	Interna. Harvester .	18,500	107½	105⅛	106⅛	+ 1¼
145	137	7	do pf.		No sales today			
242¾	90	3	Johns-Manville	28,600	134⅞	128½	129	— 5¼
16½	1½	....	Jordan Motor Car ..	3,300	5⅛	4½	4⅝	+ ⅛
24	3	....	Kelly-Springfield ...	18,400	6⅛	5	5⅛	+ ⅛
106	26	....	do 6s pf.		No sales today			
94⅞	16	....	do 8s pf.		No sales today			
59¾	18⅝	2	Kelsey-Hayes Wheel	2,700	38⅞	38¼	38¼	— ⅛
25	5	....	Lee Rubber & Tire ..	200	9⅝	9⅝	9⅝	— ⅛
61	37⅝	2.60	Link Belt		No sales today			
108⅞	22	2	Ludlum Steel	1,200	40⅜	39⅜	40⅛	— ⅛
114¼	55⅛	6	Mack Trucks	6,200	85⅜	83⅛	85	+ 1
89¾	30	*2	Marlin Rockwell	100	51	51	51	....
104	19	2	Marmon	5,800	30¼	29⅞	29⅞	+ ⅛
18	2½	....	Martin Parry		No sales today			
34⅞	9	2	Mengel	1,200	20⅛	19⅞	20	— ⅛
122⅞	44	2.50	Michigan Steel	1,400	74½	72¾	74	+ ⅝
28⅞	3¼	....	Miller Rubber		No sales today			
16½	1½	....	Moon Motors	3,300	13⅞	13⅜	13⅞	....
31¾	3¼	....	Moto Meter G. & E.	8,100	11⅜	10½	10⅞	+ ⅜
142	36	2	Motor Products	200	74¾	73½	73½	— 1½
55⅛	21	3	Motor Wheel Corp...	500	33⅛	33⅛	33⅛	— ⅛
81⅞	10	....	Mullins Mfg.	700	19¼	18⅜	19⅛	— ⅛
100⅞	14⅞	‡2	Murray Corp.	6,400	23⅝	23½	23⅝	+ ½
118⅞	40	6	Nash Motors	20,100	53⅞	52½	52⅞	+ 2⅛
41⅞	14⅜	1.50	National Acme	800	23½	22⅞	23⅜	....
16¼	¾	....	Norwalk T. & R.	500	3	3	3	....
10	9	....	do pf.		No sales today			
10⅞	2⅛	....	Omnibus Corp.	200	7⅛	7	7	....
55	22¼	2.50	Otis Steel	900	36⅞	35¾	36½	+ ¾
32¼	13	1	Packard Motor Car..	49,300	22½	22	22⅛	+ ⅛
26⅛	15½	1.50	Parmalee Transport.	5,000	22⅜	21¼	22⅜	+ ⅜
22½	5⅛	....	Peerless Motor Car..	5,200	10½	10⅛	10⅛	+ ⅝
37⅝	18	....	Pierce-Arrow		No sales today			
87½	67¾	6	do pf.		No sales today			
30¾	20	1.50	Pure Oil	8,700	26⅛	25¾	25⅞	+ ⅛
58⅛	68	2.60	Raybestos Manhattan	34,300	55⅝	51½	55	+ 2½
31⅞	10⅛	.80	Reo Motors	1,700	13¾	13½	13½	— ⅛
12¼	3⅝	....	Reynolds Spring	1,600	5⅜	5½	5¾	+ ¼
22½	9¾	1.20	Seagrave		No sales today			
31¾	19	1.40	Shell Union Oil	4,700	25⅛	24¾	24⅞	....
45	21	2	Sinclair Oil	34,500	32	31	31½	+ ⅝
73	13⅛	1	Sparks-Withington .	13,400	30½	28⅝	28⅞	+ 1⅛
66¾	20⅛	....	Spicer Mfg. Co.	600	31	30¾	31	+ ¼
55⅞	38	3	do pf.		No sales today			
81⅞	51½	2.50	Stand. Oil of Cal. .	7,400	73	71½	72	....
83	48	*1	Stand. Oil of N. J. ..	68,300	79⅞	78¾	79	— ¼
48⅛	31¼	1.60	Stand. Oil of N. Y...	12,300	37⅝	37⅛	37⅛	— ⅝
77	30	*3.50	Stewart-Warner Spd.	3,600	44¾	43⅜	43½	— ⅜
98	38¼	5	Studebaker Co.	11,200	43	42¼	42½	+ ¾
126	115	7	do pf.	10	125	125	125	....
39¼	33½	2.40	Thompson Products.	6,400	39⅜	38¼	39	— ¼
34⅜	11½	.80	Timken Det. Axle ..	6,700	20⅝	19⅛	20⅜	+ ⅞
139⅜	58½	3	Timken Roller Bear.	17,600	89	87⅛	88	+ 1½
63	30	3.50	Trico	400	40½	40⅛	40⅛	+ ⅛
139⅜	98¼	7	U. S. Ind. Alcohol ..	1,200	104½	103⅞	104½	+ 1¼
165	15	....	U. S. Rubber	16,400	34⅞	33	34⅞	+ 1⅞
92½	40⅛	....	do 1st pf.	3,200	63⅜	62	63¼	+ ¾
42⅞	15	1	Warner Quinlan ...	32,000	22	19⅝	22	+ 2⅝
67¾	36½	2	Westinghouse A. B.	1,300	47¾	47	47	— ½
53½	27¼	2	White Motors	400	41⅞	41½	41½	+ ⅛
61¼	19	2.50	Wilcox Rich A		No sales today			
62	12⅜	2	do B	900	26¾	26⅜	26¾	+ ¼
35	5¼	1.20	Willys-Overland ...	10,700	10½	9½	9⅝	— ¾
103	65	7	do pf.		No sales today			
88	61¾	4	Yale & Towne		No sales today			
51¼	7½	....	Yellow Tr. and C. B	28,100	29	27⅜	28⅞	+ ⅞
105	72	....	do pf.		No sales today			
59¾	33½	3	Young (L.A.) Spr.&W.	100	43	43	43	+ ⅞

*And extra. †And 6 per cent. in stock. ‡And stock.

U. S. Charts Week's Business Progress



Above is reproduced this week's chart of business trends issued yesterday by the Department of Commerce at Washington. These charts are now appearing regularly in Automotive Daily News.

NEW YORK CURB EXCHANGE

Sales		High	Low	Close	Net Chge
55200	Cities Service ..	42	40¼	42	+ 1⅝
300	do pf	92⅞	92½	92⅞	— ⅛
	Cont Dia Fibre.		No sales		
23500	Cord Corp	16½	15⅞	16½	....
100	Doehler D C	18	18	18	....
13400	Durant Motor..	6⅞	5⅝	6⅞	+ ⅛
500	Fageol Motor...	3¼	3	3⅛	— ⅛
	Fedders		No sales		
	Federal Mogul..		No sales		
500	Federal Screw..	40⅞	40½	40⅞	+ ⅝
	Fiat		No sales		
5100	Ford Canada....	38½	37¾	38⅛	+ ⅝
1100	Ford France....	11¼	11	11	+ ¼
11100	Ford Ltd	19½	19	19⅜	+ ⅜
1100	Franklin Mfg...	22¾	21	22¾	+ 1
	Gen T & Rub..		No sales		
	Gr'nf'ld T & D.		No sales		
	Hall Lamp		No sales		
	Henney		No sales		
	Hood Rubber ..		No sales		
	India Tire		No sales		
	Isotta Fras		No sales		
	Jaeger		No sales		
	Lakey		No sales		
	McQuay Norris.		No sales		
	Midland Steel..		No sales		
500	Nat Rub Mach.	21¾	21¾	21¾	+ ⅝
4500	Paramount Cab.	10	8½	8⅝	— 1⅛
	Perfect Circle...		No sales		
	Pines Winter....		No sales		
100	Pitt Plate Glass	58	58	58	....
	Rolls Royce Am		No sales		
	Ross Gear		No sales		
	Safe T Stat....		No sales		
100	Seiberling	12⅞	12⅞	12⅞	+ ⅞
30	Smith A O	237¾	235½	237¼	+ ¼
	Sparks With		No sales		
1200	Stutz Motor ...	3⅜	3¼	3¼	....
100	Thermoid Co ...	85½	85½	85½	— 1⅜
200	Triplex	6⅞	6⅝	6⅝	— ⅛
300	Tung Sol	23	21⅞	22	— 1
	U S Asbestos...		No sales		
600	Watson, J W....	3⅜	3½	3½	— ⅛
1300	Wayne Pump...	14	13⅝	14	+ ⅜
	West Auto		No sales		
	Yellow Taxi N Y		No sales		

NEW YORK OVER-THE-COUNTER

Div.		Bid	Asked
6	American Hard Rubber...	60	63
....	Dixon (J) Crucible.....	168	175
3.50	Doehler Die Casting.....	37½	..
7	do pf	83	..
....	Eisemann Magneto	22	..
7	do pf	90	..
....	Rolls Royce Am.....	..	13
....	do pf	15	18
....	Splitdorf Beth Elec.....	5¼	5¾

CHICAGO STOCK EXCHANGE

Sales		High	Low	Last
100	Acme Steel	72½	72½	72½
1150	Allied Motor Ind...	17½	17	17½
100	Allied Products	47¼	47¼	47¼
200	Auburn Auto	260	259	259
5500	Bendix Aviation	55¾	54⅝	54⅝
6350	Borg-Warner	48⅛	47⅜	47¾
50	Chain Belt	48⅜	48⅛	48⅛
2250	Chicago Yellow Cab	30¼	29	30
33500	Cord Corp	16¾	16	16¼
250	Houdaille Hershey A	29¾	29⅛	29⅛
5200	do B	28	27	27½
100	McQuay Norris	50	50	50
100	Muncie Gear A.....	3½	3½	3½
250	Muskegon M S.....	21	21	21
350	Noblitt Sparks	56¼	55½	55½
100	Perfect Circle	42½	42	42
150	Pines Winterfront..	43¾	42½	42½
50	Sterling Mot Truck.	26	26	26

CLEVELAND STOCK EXCHANGE

Sales		High	Low	Last
50	Firestone pf	85¼	85¼	85¼
20	General Tire	150	148	150
10	Geometric Stamping	18	18	18
30	Glidden pr pf.....	104	104	104
205	India Tire	20	19¾	20
50	National Acme	23½	23½	23½
25	Otis Steel	36¼	36¼	36¼
50	Packard Electric ...	24¾	24¾	24¾
205	Seiberling Rubber...	13	12¾	13
110	Thompson Products.	39	38½	38½

DETROIT STOCK EXCHANGE

Sales		High	Low	Last
7140	Bower Roller B.....	18	16⅞	17⅞
135	De roit Motor Bus..	6½	6½	6½
1478	Excello	20½	20	20
1185	Federal Mogul	17¼	15	15¾
425	Federal Screw	40⅝	40¼	40½
270	Federal Mot Truck.	11⅜	11⅜	11⅜
1168	Ford Motor Canada	38½	38	38
194	General Motors ...	53¼	53¼	53¼
1727	Hall Lamp	15¼	14⅞	15
1100	Houdaille Hershey B	27¾	27½	27¾
235	Hutto Eng	7⅛	7⅛	7⅛
1722	Motor Bankers	24	23½	23½
1450	Pittsburgh Forge ...	23½	23	23¼
259	Parker Rustproof...	125	124	125
2350	Packard Motors	22⅜	22	22⅛
100	Reo Motors	13¾	13¾	13¾
1608	Timken Det Axle...	20½	19½	20½
725	Universal Products.	26½	26	26½
100	Wilcox Rich B.....	26½	26½	26½

GRAHAM-PAIGE BODY PLANT BOOSTS OUTPUT

Evansville, Ind., April 11.—Graham-Paige Body Corporation, builder of Graham passenger car bodies, is well into a production schedule which within the next five weeks will have reached capacity peak of 250 bodies a day and employ 1,200 people, according to statement of R. E. Stone, secretary.

L. A. YOUNG SPRING EARNS $1.28 PER SHARE IN 1929

Detroit, April 11.—The L. A. Young Spring and Wire Corporation reports for the quarter ended March 31, 1930, net profit of $526,885 after taxes and charges, equivalent to $1.28 a share on 413,500 no par shares of stock. This compares with $675,647, or $2.04 a share on 330,000 shares in first quarter of 1929.

L. A. Young, president, stated that based on unfilled orders on hand and in prospect that the outlook for the second quarter and the remainder of the year is splendid and exceeds what appears to have been the expectation of two or three months ago.

The common stock is now paying a cash dividend of $3.00 per annum on 412,500 shares, which is equivalent to $3.75 per share on the total outstanding common stock prior to the 25 per cent. stock dividend paid August 25, 1929.

WINTON ENGINE CO. DECLARES DIVIDEND

Cleveland, April 11.—Directors of Winton Engine Company declared the regular quarterly dividend of 75 cents a share on the preference stock and $1 a share on the common stock, payable June 1 to stockholders of record May 20.

George W. Codrington, president, said that since the issuance of the annual statement on March 4, almost 5,000 shares of the company's convertible preference stock had been converted into common and that now less than 8,500 shares of preference stock were outstanding.

Production--Engineering--Factory

Centrifugal Superchargers

THE following paper by Sanford A. Moss was presented this week at the Society of Automotive Engineers' meeting in Detroit, held in connection with the National Air Show. This paper will be presented in full, serially, in Automotive Daily News, beginning today.

By SANFORD A. MOSS, Engineer
General Electric Company

THE geared centrifugal supercharger, now in extensive use on commercial airplane engines, has never been adequately presented in print.

Such outfits are used for some or all of four independent purposes:

1. Improvement in distribution of engine charge, with carburetor and inlet pipe simplification.
2. Maintenance of full power at moderate altitudes.
3. Increase of power at sea level for short periods and emergencies.
4. Increase of normal full-load power at sea level.

The superchargers in commercial use are centrifugal compressors geared from the engine crank shaft and with such rotative speed and design detail as to give an appreciable pressure rise. A system of cf co-operation between the engine builder and the supercharger manufacturer has been devised so that the supercharger is not an external accessory but is an integral part of the engine.

The air passages, impeller casings and diffuser are built as integral parts of the engine crank case, according to designs furnished by the supercharger manufacturer, so that the high-speed impeller itself becomes the only part which the supercharger manufacturer supplies. This system enables the engine builder to have, with a trivial addition to the weight, cost and size of the engine, the benefit of a supercharger carefully designed and superintended by specialists in the art.

The Centrifugal Compressor—The centrifugal compressor is an apparatus for compressing air to appreciable pressures, similar in a general way to the well-known fan blower and centrifugal pump. However, the various air and impeller speeds and the pressure rise produced in proportion to the density, are very much greater than in such blowers and pumps. A very large amount of theoretical and experimental data has been accumulated in the United States, beginning in 1904, which has enabled a particular type of centrifugal compressor to be constructed with very high eficiency and marketed in large quantities.

In the centrifugal compressor (and supercharger) the air enters the high speed impeller near the center, through an eye, or annulus, so proportioned as to give a proper compromise between too high a velocity of the fluid as it enters the impeller and too high a velocity of the blade tips which receive the fluid. The inlet tips of the impeller blades are bent forward so as to receive the fluid without shock. This is because the fluid at the inlet edges of the blades is proceeding at a certain angle relative to the blades. This relative direction is, of course, different from the absolute direction of the inlet fluid in space. The inlet edges of the blades must be exactly faced in the relative direction of the fluid. The impeller passage then curves so as to bend gently the stream of the fluid and pass it to the exit edges of the impeller blades, which are always in a radial direction.

During the flow along the impeller from impeller entrance to impeller exit, the fluid has a certain relative velocity with respect to the impeller. The passage areas are so maintained as to keep this relative velocity comparatively small to minimize friction loss. At the impeller exit there has been produced an appreciable pressure as a result of the so-called "centrifugal effect." The fluid, furthermore, has a high absolute velocity which is practically the velocity of the tips of the impeller blades. This velocity represents a certain amount of kinetic energy which has been imparted to the fluid, but which is not in useful form. This high-velocity fluid is discharged into a carefully designed passage beyond the impeller, called a "diffuser." This diffuser is so shaped as gradually to slow down the velocity of the fluid with a minimum of friction and eddy loss. Such an efficient decrease of velocity results in an increase of pressure, so that at the diffuser exit there is a pressure appreciably greater than that at impeller exit, due to "conversion of velocity into pressure."

Centrifugal compressors of this description are used for a great many commercial purposes which require air at pressure of from one to thirty pounds per square inch, such as in foundry cupolas, blast furnaces for pig iron, pneumatic tube and conveyor systems, air supply of furnaces, exhaustion and compression of gas in illuminating gas plants and many similar items.

(TO BE CONTINUED)

NEW CAR THEFT ALARM

Milwaukee, Wis., April 11.—Emil Schultz, retired maintenance engineer, has invented a burglar alarm device for automobiles. The inventor has devised and patented a lock with a connection to the exhaust manifold, so that when a car is driven off without locking it a shrill siren sounds.

Allen Electric Offers New Magneto Tester

Allen Electric and Equipment Company of Kalamazoo, Mich., has just put a new magneto tester on the market. It is designed and built to the requirements of one of the largest magneto manufacturers in the country. It enables the making of all necessary check tests.

It has a double pulley drive, giving a high and low speed drive to the magneto.

It has a double scale tachometer. When the magneto is driven at low speed, it rotates one-fourth motor speed, and the magneto speed is read directly on the lower scale of the tachometer, from 50 to 500 revolutions per minute. This gives a very accurate and stable control of speed. Come-in speeds less than 100 revolutions per minute are accurately determined.

High speed pulleys give a speed 2½ times motor speed, which is read on upper scale of tachometer, range 500 to 5,000 r. p. m. Motor has a surplus of power (rated ½ h. p. but developing nearly 1 h. p.) over and above what is required. Thus the speed is always steady and smooth, whether magneto is operating at 50 r. p. m. or 5,000 r. p. m.

Multiple spark gap is accurately made. Each gap has three nickel manganese points that will not corrode. Top and bottom points are both adjustable. Friction is provided by means of a ball and spring in each point.

Adjustment is individual and gaps can all be set exactly the same. This system, while more expensive to make, is preferred by operators doing careful work, as compared with the rough and ready method of adjusting all the points on one cross bar.

Magneto clamp is simple and quick in operation. One screw clamps the magneto in place, the other adjusts the belt to the right tension. An ignition coil with a vibrator and an "on" and "off" switch is provided together with battery leads and clips. This is used to test the booster circuit on magnetos such as the Scintilla.

The whole assembly is mounted on a heavy plywood base.

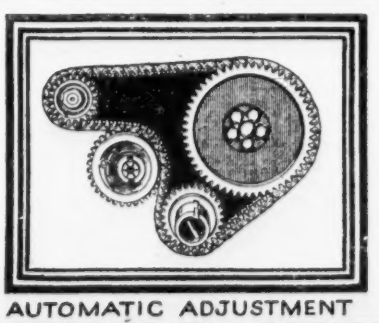
At small additional cost, an extra coupling for calibrating aircraft tachometers can be furnished. Price $200, complete.

INVENTS NEW CAR LOCK

Boston, Mass., April 11.—Barney Sahl of Roxbury has invented a lock for motor vehicles, which is permanently attached to the emergency brake lever, and when it is thrown it controls the emergency brake pawl, so that once the brakes are set they cannot be opened until the lock is opened by operation of the safe combination. In addition to protection of the brake control, there is an ignition switch integral which controls the ignition system of the car.

COMPLETE NEW PASSENGER CAR

States	Auburn	Austin	Black Hawk	Buick	Cadillac	Chevrolet	Chrysler	Cord	DeSoto	Dodge	Durant	Elcar	Erskine	Essex	Ford	Franklin	Gardner	Graham	Hudson	Hupmobile	Jordan	La Salle
Ala., '29	2			67	1	542	32		3	47	12		3	54	551	1		14	21	11	1	6
Ariz., '29	12			41	2	245	17		50	72	31		18	80	464	4		41	32	15		4
Ark., '29	1			33	2	449	30		25	77	11		3	37	772	1		13	5	4		6
Cal., '29	94			842	126	3295	550		431	686	577	48	64	1082	5933	81	20	343	419	206	19	129
Colo., '29	7			98	4	570	41		41	100	62		9	148	815	3		31	48	20		3
Conn., '29	28			133	18	499	63		62	131	19	5	13	259	554	13	3	61	69	42	2	25
Dela., '29	6			22	2	136	7			7	15		2	22	194	3		8	12	2		6
Fla, '29	9			134	9	774	88		41	81	2	2	9	143	924	3	2	47	54	27	4	22
Ga., '29	3			142	4	921	33		32	76	9		7	61	1305	12		56	31	27		4
Idaho, '29	1			21	2	116	7		10	24	24		6	23	267	2		6	8	3		
Illinois, '29	123			500	94	2813	341		224	434	176	16	44	737	3795	42	22	346	279	149	7	77
Ind., '29	62		1	185	7	1715	111		72	246	66	15	45	477	2160	4	10	129	123	45	4	9
Iowa, '29	11			58	4	1353	35		20	98	55		9	152	1486	1		38	47	18		2
Kan., '29	21			160	12	1145	62		44	185	104		72	444	1874	4	2	67	189	82		25
Ky., '29	4			31	6	768	33		36	95	37		5	141	998	5		32	25	22		8
Loui'a, '29	8			61	2	675	30		25	117			5	81	1148	3	1	16	23	14	3	6
Maine, '29	1			25	4	102	7		3	16	6		1	58	128	3		2	11	3		4
Mary'd, '29	7			132	6	754	66		29	84	27		6	211	920	13	1	54	63	20		10
Mass., '29	26			225	43	1011	159		67	254	33	5	19	592	1706	35	3	116	158	90	2	66
Mich., '29	34			507	37	3703	153		156	289	104	1	14	1469	5608	3		225	417	153	1	55
Minn., '29	8			90	9	608	47		24	99	48	2	13	114	1100	4	5	62	49	16		8
Miss., '29				57	3	605	18		13	55	4		1	15	966			1	5	8		2
Misso'i, '29	44			475	27	3095	193		109	509	228		31	538	3824	10	32	143	132	93		47
Mont., '29	2			40	2	236	19		9	50	25		6	29	303	3		24	14	1		4
Neb., '29	9			138	2	1186	73		48	140	71		18	108	1592	3	1	97	24	19		7
Nev., '29	2			28	3	54	8		5	26	3			16	102		1	3	8	2	1	1
N. H., '29				10		72	6		7	10	6		5	36	124	2		4	10	6	1	
N. J., '29	69			367	67	1679	212		136	254	57	2	27	536	1863	33	4	115	191	154	10	74
N. M., '29	2			25		104	13		6	17	7		1	4	181			2	3	5	1	
N. Y., '29	176		1	964	163	4076	535		287	544	119	31	43	1190	4424	117	13	390	479	242	12	177
N. Car., '29				153	8	1589	123		62	221	64		10	302	2555	7		14	99	29		8
N. Dak., '29	1			14		173	11		8	24	20		4	22	324	2		5	3	6		
Ohio, '29	75			405	46	4017	240		199	369	105	6	25	1098	4897	29	7	239	321	136	17	33
Okla., '29	9			262	7	1662	105		50	404	50		18	181	2943	9	1	46	55	37		14
Ore., '29	8			50	1	551	25		7	76	99		13	81	612	7		19	30	10		4
Penn., '29	88			543	59	3095	369		252	514	150	2	34	990	4317	53	8	244	297	158	21	107
R. Isle., '29	6			53	4	182	36		20	47	2		2	47	192	11	1	30	16	8	1	6
S. Ca'a, '29				31	3	539	29		11	38	18		3	65	933			8	22	11		1
S. D., '29	2			65	1	351	29		16	103	71		17	59	649	2		29	9	13		1
Tenn., '29	4		1	99	7	912	41		22	132	27		7	128	1080	5	2	37	25	22		10
Texas, '29	26			478	17	3099	217		231	533	116		43	335	5331	14	1	125	108	62	2	28
Utah, '29				22	4	187	17		6	44	55		2	61	322	1		13	19	7		5
Verm't, '29				8	3	60	9		4	15	3		4	28	72			3	9			2
Va., '29	6			73	6	785	59		28	105	23		11	164	1276	4		22	40	28		9
Wash., '29	1			93	4	453	58		20	80	73		8	84	634	2	1	30	34	10		5
W. Va., '29	5			37	2	452	28		27	87	12		5	90	502	2	1	20	16	10	1	8
Wis., '29	11			125	11	883	58		42	125	39	1	14	260	1128	9	2	49	102	14	1	6
Wyo., '29	1			54		74	19		9	53	10		3	38	154				12	3		3
D. of C.	12			73	8	243	34		10	26	2		2	99	528	4	1	30	35	24	1	8
Totals, '29	1027		3	8249	852	52608	4496		3037	7819	2877	136	724	12989	74525	569	145	3449	4201	2087	112	1045
Jan., '29	910			10566	1037	31237	5753		3220	9441	3587	151	1026	12743	78902	560	150	2990	3340	2266	227	1133



TIMING CHAIN

AS LONG as the car owner never hears his timing chain, never has to think about it, never has to spend money on it, he is getting timing chain satisfaction. That's what he's after when he asks you if there is a Link-Belt Chain on your make of car. He wants the front end drive

LINK-BELT COMPANY

(Reg. U. S. T

Westinghouse Stroboglow Aids Engine Inspectors

For the first time apparatus so compact that it fits into a suitcase was demonstrated at Bettis Field, Pittsburgh, that made it possible to read markings on an airplane propeller revolving faster than 1,000 revolutions per minute. By means of this apparatus, called the stroboglow, propeller quiver and cracks and engine valve action are visible to the naked eye. Because of the importance of having the propeller and engine in perfect condition it is said to be probable that the stroboglow may be made a part of an airplane's required inspection before flight.

The stroboglow, invented and developed by D. D. Knowles, L. R. Peters and W. E. Bahles of the research laboratories of the Westinghouse Electric and Manufacturing Company, makes moving objects appear motionless by means of flickering lights regulated to flash at intervals corresponding to the speed of the moving object.

Because of its compactness it can easily be taken to the moving object which engineers desire to observe. With it, the amount of slip of a belt moving on a pulley, the vibration of meshed gears in factory machines, and the movement of valves in gasoline engines may be observed. In short, anything that moves may be made to appear motionless.

The difference in revolutions per minute between motors, turbines, discs, or other units, revolving at approximately the same speed, can be counted with the stroboglow.

The advantage the stroboglow has over previous instruments is its ability to be used on the job instead of trying to duplicate conditions in the laboratory. The only requirement for its operation is sufficient darkness to render the flickering lights visible on the moving object.

U. S. Air Compressor Adds New Oil Locked Car Lift

A FULL hydraulic, oil locked car lift, which the manufacturers assert is as nearly "custom built" as is possible with automotive equipment, has just been introduced by the United States Air Compressor Company of Cleveland, Ohio.

The new lift is known as the Series A, U. S. Full Hydraulic Car Lift. It is made in both the drive-on and free-wheel types, two models of the drive-on type being offered. Models A-12 and A-15 are the drive-on types, one having twelve-inch runways and the other fifteen-inch runways. The free-wheel type is known as Model A-2.

According to R. L. Bacher, president of the United States Air Compressor Company, safety in a car lift is the consideration which outweighs all others. This is true, he says, because about the only time car owners get a chance to see the under side of their cars is while they are elevated on a lift, and naturally they like to watch operations while a car is raised and frequently walk under the lift. And not only that, but safety to serve men must be assured under all conditions.

FOUR WAY DIRECTION SIGNAL WINS ATTENTION

Wichita, Kan., April 11.—A Wichita manufactured automobile product that is gaining wide attention is the four-way electric auto signal manufactured by the Cantwell Electric Auto Signal Company. This product, the result of several years' study and development, is considered by those who have seen it the last word in automobile signal lights.

The signal consists of a front and rear signal light 5 5-8 inches in diameter, controlled from a switch on the steering wheel, which signals both forward and rear the driver's intention to stop, go, turn right or turn left. Both front and rear signals are available in either chromium and black lacquer finish or all chromium finish to match the headlights used on the car. The front signal has a green glass while the rear signal has the regulation red glass.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

REGISTRATION TABLE, FEBRUARY, 1929

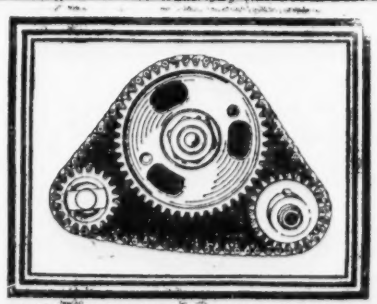
States	Lincoln	Marmon	Marquette	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Studebaker	Stutz	Viking	Whippet	Willys	Willys-Knight	Windsor	Miscellaneous	Totals
Ala., '29		1		19	13	6	12			33	43	4	8	1		95		3		5	1,611
Ariz., '29		6		43	18	25	11		1	23	42	2	56			77		16			1,448
Ark., '29	1	6		37	10	14	2			53	58	2	13			75		5	1	6	1,752
Cal., '29	51	73		628	305	442	228	32	21	263	698	156	618	21		462		363	29	170	19,505
Colo., '29	2	10		103	21	44	3	1		55	94	5	24	3		175		27	2	4	2,573
Conn., '29	2	15		104	43	62	47	4	3	47	169	29	82			105		28	2	14	2,755
Dela., '29	1			22	9	15	15	2	1	5	35	3	15			33		2		1	603
Fla, '29	5	1		67	25	28	28	1		56	66	13	35	2		106		13		6	2,827
Ga., '29	1			57	15	18	15		3	45	78	12	23	1		180		4		3	3,178
Idaho, '29				10	3	16	1			13	13	2	7			41		2		3	631
Illinois, '29	51	23		518	249	322	148	34	14	202	663	75	312	16		629		141	19	72	13,707
Ind., '29	1	30		121	72	292	19	2		102	481	22	125	6		599		57		29	7,444
Iowa, '29		2		60	22	78	5	2		55	146	10	29	2		348		44	1	16	4,207
Kan., '29	1	17		231	25	58	34	11	3	169	184	78	184	4		529		24	6	66	6,116
Ky., '29	3	2		29	14	42	10	2	2	62	75	11	26			212		17	2	7	2,762
Loui'a, '29	3	3		81	25	38	7	3	1	51	138	10	25			52		14		2	2,671
Maine, '29		3		24	4	9	6	2		11	28	5	8			30		3		6	513
Mary'd, '29	2	12		89	18	59	26	10	2	52	107	13	38	2		118		20		33	3,004
Mass., '29	5	21		216	58	116	85	29	9	79	295	58	138			236		46	4	149	6,154
Mich., '29	19	28		161	124	480	86	19	8	199	1039	72	202	3		685		96		132	16,282
Minn., '29	7	5		69	39	87	30	2		48	159	17	63	2		210		41	1	28	3,114
Miss., '29	1			24	1	6	2			35	25	2				69		1			1,919
Misso'i, '29	13	50		242	111	361	82	27	12	169	590	47	144	8		927		126	18	97	12,554
Mont., '29		4		45	11	15	6			26	66	7	19			64		15		7	1,052
Neb., '29	2	7		69	32	77	7	5		109	236	3	52			509		39	1	21	4,705
Nev., '29	1			12	2	2	2			3	3		10			3		3		2	306
N. H., '29				15	4	12	6			4	15	2	10			16				2	385
N. J., '29	18	39		358	121	236	150	53	14	131	341	66	268	3		293		125	6	48	8,120
N. M., '29				5	5	12	3			7	10	3	12			28		10		3	469
N. Y., '29	45	65		880	218	550	354	70	40	264	798	96	547	10		874		383	5	133	19,315
N. Car., '29	3	4		75	64	116	23	5		114	219	5	48			364		37		8	6,329
N. Dak., '29	1	2		21	11	14				26	47	1	6			72		7		14	839
Ohio, '29	21	29		352	163	493	68	82	7	199	982	38	272	3		1339		229	5	357	16,903
Okla., '29	3	2		120	70	97	25	6	4	122	276	24	43	3		623		39	2	16	7,328
Ore., '29	2	3		30	17	48	7		1	36	82	10	29			83		20		9	1,970
Penn., '29	11	44		433	163	448	216	65	17	231	506	106	239	5		745		141	3	106	14,830
R. Isle., '29	1	3		26	3	10	14	5		24	58	21	22			45		10		5	911
S. Ca'a, '29	4	1		29	11	21	4			43	87	1	15			72				1	2,001
S. D., '29		2		50	16	81	3			50	59	4	19			218		20		13	1,952
Tenn., '29	1			54	21	50	11		1	43	94	7	57			152		15		11	3,078
Texas, '29	4	30		241	100	215	38	13	15	262	538	81	173	4		910		72	5	13	13,480
Utah, '29		2		17	3	19	9			10	19	8	8	2		38		6		4	910
Verm't, '29		1		19	4	10	3	1		6	11		10	2		33		3		3	326
Va., '29	1	2		38	32	44	15	5	2	56	95	14	27			170		29		24	3,191
Wash., '29		2		51	16	35	4		1	47	72	7	34	1		94		19	1	6	1,980
W. Va., '29		7		36	16	32	4		3	31	55	16	15	1		95		10		18	1,644
Wis., '29	1	3		146	48	129	18	8	1	55	218	10	69	2		167		20		43	3,813
Wyo., '29		2		49	1	10	1	1		37	15	7	11			25		7		3	602
D. of C.	3	14		46	38	44	24	25	3	9	105	12	22	1		39		21	1	21	1,568
Totals, '29	291	576		6172	2414	5438	1917	527	189	3772	10233	1197	4262	108		13064		2373	114	1740	235,337
Jan., '29	371	645		6637	2815	3886	2322	413	214	4771	6093	1262	4467	174		12888		1894	187	1567	219,845

SATISFACTION

so well done that he can forget about it. You give him what he wants when you install a Link-Belt Silent Chain, because this chain is built to the highest standards of quiet, dependable and long-lived performance by a company that is famed for its quality products.

INDIANAPOLIS - - DETROIT

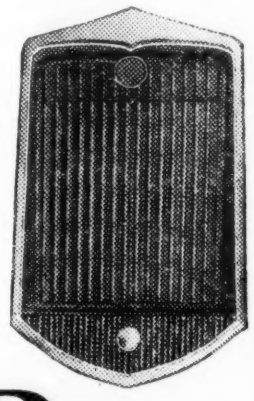
3907-A



MANUAL ADJUSTMENT

(Trademark)

EASIER TO SELL THAN EVER BEFORE



Pines AUTOMATIC winterfronts

are firmly established as the best protection for ALL cars

REGARDLESS of the fact that over twenty automobile manufacturers now offer Pines Automatic Winterfronts as standard equipment on their cars, dealers still have millions of prospects—cars that are being driven without this automatic radiator protection. The judgment of the leading automotive engineers in adopting this device has made owners of *all* cars conscious of the fact that automatic radiator protection is indispensable in the efficient operation of a motor vehicle. Pines Automatic Winterfronts are easier to sell today than ever before. Let your nearest Pines distributor explain the profit possibilities in selling and servicing Pines Automatic Winterfronts—or write direct to the factory.

These cars are now equipped with Pines Automatic Winterfronts:

BLACKHAWK NASH
PIERCE-ARROW 133-143
JORDAN 8
CHRYSLER 70, 77
CHRYSLER IMPERIAL
CORD WILLYS-KNIGHT 66B
MARMON 8-79 W. and H.
DURANT 66 and 70 STUTZ
STEARNS-KNIGHT De Luxe 8-90
DODGE SR. SIX CUNNINGHAM
STUDEBAKER PRESIDENT and COMMANDER
PEERLESS B & C ROLLS ROYCE
BUICK 40-50-60
GARDNER 130 HUPMOBILE 8
GRAHAM 621, 827, 837
CHECKER CAB BRADFIELD CAB
G. M. C. TRUCK AND OTHERS

PINES WINTERFRONT COMPANY

1135 N. Cicero Ave., Chicago

Wholesale distributing connections everywhere. Write for name of your nearest distributor

New Dealers Appointed

ALASKA

Hupmobile—Washburn Brothers, Ketchikan.

ARKANSAS

Studebaker-Erskine—Moore Motor Company, Walnut Ridge; Automobile Sales Company, Blytheville; Automobile Sales Company, Osceola.

Durant—Holcomb Motors (distributor), Little Rock.

CALIFORNIA

Studebaker-Erskine—Peterson & Sibley, Oceanside; Central Garage, Lafayette.

Hupmobile—James White, Richmond; Walter Spears, Lone Pine; S. & S. Motor Sales Company, Redlands; James E. Clark, Santa Barbara.

Auburn—Sanguinetti & Olson, Stockton; Willits Auto Sales Company, Willits; Fred W. Webber, Modesto; Colusa Auburn Company, Colusa; F. & K. Garage, Los Angeles.

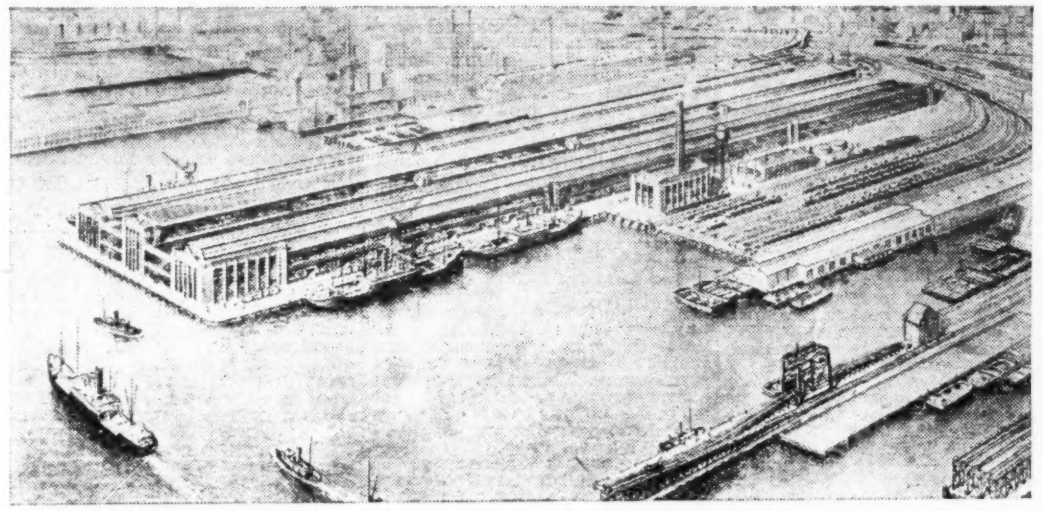
CANADA

Nash—Northern Nash Motors, Ltd., Prince Albert, Sask.; Thomas E. McNulty, Nokomis, Sask.; Leslie Farr, Airdrie, Alta.

Graham-Paige—Green's Motor Sales, Ltd., Belleville, Ont.; P. H. Armstrong, New Liskeard, Ont.; Ainslie Motor Sales, North Bay, Ont.; T. Edwin Culton, Springhill, N. S.; Berini Motor Sales, Timmins, Ont.; McLean's garage, Ltd., Vegreville, Alta.; F. D. Armitage, Westlock, Alta.

Hupmobile—Luc N. Roy, Cap Chat, Que.; B. McDonald Garage, Kelowna, B. C.; Mistele Garage, Rodney, Ont.; Anderson Brothers, Picton, Ont.; A. J. Nelson, Clyde, Alta.; L. Rumley, Widewater, Alta.

New Ford Plant Nears Completion



ABOVE IS SHOWN an architect's prospectus of the new Ford assembly plant now under construction at Edgewater, N. J. The piers will jut out 550 feet into the Hudson River.

WORK is progressing rapidly on the new Ford Motor Company's assembly and export plant at Edgewater, N. J.

The Turner Construction Company of New York city is in charge of the erection of an assembly building, a dock, boiler house, overpass for a highway, concrete roads and walls, wharves and bulkheads outside of the buildings on a contract for $2,726,996. The acreage of floor space will be about double that of the present Kearny plant, which will gradually be moved to Edgewater, beginning July 1.

The Western Foundation Company of Detroit has completed the work of driving some 3,500 piles on the somewhat soggy ground on which the immense plant is being erected.

The assembly building will be 360 feet wide and 1,500 feet long, and two stories high. There will be six aisles for the use of the continuous line assembly system. A 60-foot width craneway will run from end to end in the center of the building, terminating at the water's edge on the dock.

On top of the building another crane will tower seventy-five more feet and will be used for picking up the automobiles and swinging them to the holds of ocean-going vessels for foreign shipment. The walls will be of cement, reinfirced with steel, and the roof will be of the same construction, with six skylights evenly spaced for the width of the building. Creosote blocks will be used for flooring. Fully 460 feet of the building will be built over the water on piles to the bulkhead line. This structure is to be ready for occupancy, with the exception of the portion to be used for office purposes, on or about July 1.

The office building, which is to be the final portion finished, will have marble imitation walls and cement floors covered with rubber tile flooring. The payroll office will have bullet-proof glass of the latest design.

The bulkheads and wharves will surround the assembly building on three sides and to a depth of 460 feet. A slip on the side will be dredged deep enough to enable small steamers of the type used on the Great Lakes to dock with their loads of motors and body parts and other supplies from the Detroit and River Rouge, Mich., plants of the company. On the north side two railroad sidings will terminate at the river front.

Thee boiler house, the first unit constructed, was ready for the installation of the boilers March 15. The overpass was the next unit started, so that the materials and workmen may have easy access to the plant. It bridges several tracks of the Erie Railroad at this point. The roadway will be thirty feet wide, will have a sidewalk as a separate unit and will be made of reinforced concrete with steel stairways. Automobiles taken out for road tests and for delivery in suburban territory will leave and enter this way. It will be completed on or before May 1. An oil house to be used for storing gasoline and kerosene is to be finished at the same time. A tunnel from the assembly building will terminate there and another at the boiler house.

As a means of facilitating rapid loading of vessels, nineteen sets of sliding doors will be built near the "export craneway," each operated by an individual motor and made in two sections, the lower half raising twice as fast as the upper.

It is expected at first about 2,000 persons will be employed at the new plant. Most of the help will be drawn from the plant at Kearny, N. J., but additions to the force, which is expected to reach 7,000, will be made gradually. No parts are to be made or machined at the new plant.

Cumulative New Commercial Car Registration Table, Feb., 1930

Returns for today: Colorado, Georgia, Kentucky, Mississippi, New York, Oklahoma, Tennessee, Texas, Wyoming and the District of Columbia

Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. Commercial Car Registrations do not include buses.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Dover	Fargo	Federal	Ford	G. M. C.	International	Mack	Pierce-Arrow	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Alabama			280		7		1		228	6	18	6			2					2	1	6	1		1	559	Alabama
Arizona			51		13				91	3	5	1			4											168	Arizona
Arkansas		1	101		10			1	126		25									1	1		2			268	Arkansas
California	8		342	1	96	3	10	12	1005	33	27	21		1	62	3	3	16	4	11	4	15	2		84	1763	Calif.
Colorado		1	119		19	2	1		176	13	22				1		3				1	6	11		1	376	Colorado
Conn.	1		86	12	24	5	2	3	162	4	18	8		1	16					8	2	1	4	1	7	365	Conn.
Delaware	3	3	37		2				39	1	3	1			5										2	96	Delaware
Florida		10	253		19	2		3	393	6	31	5			12		1				8	8	1		3	755	Florida
Georgia	1	10	203		26	2		1	300	7	39				3					1	6	13	3	2	3	620	Georgia
Idaho	1		36		4				52	2	3				4		1				1	1				105	Idaho
Illinois	10	12	676	87	88	1	21	20	747	21	217	16			35	4	3	10	4	29		16		3	121	2141	Illinois
Indiana	26		440	10	54	1	4	3	489	28	88	1		4	21		1		10	9	9	5	12	2	4	1221	Indiana
Iowa			299		9	1	1		235	6	64	5			14		3				1	1	7	3	3	652	Iowa
Kentucky		11	247		22	1	4	2	265	15	52				12		1			2	5	6	4	1	5	655	Kentucky
Maine			72		8	1			59		6	1			7			2			1		1		1	159	Maine
Maryland	12	5	139	3	11	1	1	3	212	3	17	3			8	2		1	3	1	1	8	2		16	452	Maryland
Mass'setts	17	5	126	12	43	8	8	3	309	25	43	14			13			2	5	4	4	12			7	660	Mass.
Michigan	3		354		33	5	6	5	713	29	41	2		1	21	7			1	2	2	4	4	1	17	1251	Michigan
Minnesota		3	122	1	22	1	2	8	279	10	47	4		1	12	1	2			2	7	5	6		1	536	Minnesota
Mississippi		1	193		10				257	5	26				1						6	3				502	Miss.
Missouri	6	9	769	28	104		8	29	954	45	142	10		2	47	1	7	3	1	5	28	29	14	4	39	2284	Missouri
Montana			57		9		1		117	6	37	1			1					1	1					231	Montana
Nebraska			252	1	18		2	1	254	12	52	4			9					1	4		5	1	3	619	Nebraska
Nevada			7		3			1	24	5	2														1	43	Nevada
N. Hamp.		3	23		6			1	35		3				1				1					1	1	75	N. Hamp.
New Jersey	7	18	313	18	56	1	3	5	439	17	19	26			16		3	4	1	2	1	10		3	38	1000	N. Jersey
N. Mexico			38		1				39	1	4										2		1			86	New Mex.
New York	14	62	547	18	87	6	18	13	1007	38	85	80		3	41			15	54	11	8	49	7	3	38	2204	New York
N. Carolina	2		201		15	1	1		196	6	17	2			1		2				3	1	2	1	1	452	Nor. Car.
N. Dakota			38		2		2		41	1	29				4					1	2		3			123	Nor. Dak.
Ohio	18	4	350		52	6	4	3	557	15	73	5		2	30	1	4		8	4	16	35	5	3	29	1224	Ohio
Oklahoma	1	3	380	1	32	1	5	11	403	14	62	7			12						6	4	9		9	960	Okla.
Oregon		1	78		21		2	5	170	6	13	8			6	2	3	1		2	2	3		1	7	331	Oregon
Penn'vania	21	32	480	7	112	3	10	10	808	53	94	43		8	38	5	7	9	39	4	22	25	5	4	33	1872	Penna.
Rh. Island	8	1	27		9			1	58	4	5	3			6							4			1	127	Rh. Island
S. Carolina			101		2	1	2	1	107	1	10	1				1	2					1				230	South Car.
S. Dakota		1	96		12		1		105	3	65	2			11		1			1			7	* 1	6	312	S. Dakota
Tennessee			131		20	1	1	1	132	7	15	1			5		2		2	1	2				4	325	Tenn.
Texas	1	6	869	1	58	4	13	3	1063	23	183	4		3	29		8			6	13	18	15	3	47	2370	Texas
Utah			27		3				59	1	11	2			5							1				109	Utah
Vermont		1	27		4			1	35	2	3				2						4	1				80	Vermont
Virginia		5	377		20		1	3	318	9	36				9	2	1		3		2	4	9	5	12	816	Virginia
Wash'ton			86		12		5	2	164	7	24	2			4		5	2		2		5	2		19	341	Wash'ton
W. Virginia			90	1	14		2	1	123	7	11				7	1				2	3	3			2	267	West Va.
Wisconsin		1	277	6	26		5	4	310	14	42	1	1		16	1	2	8	4	3	4	1	7		15	748	Wisconsin
Wyoming			17		5		2		52		11				1		2				1		1			92	Wyoming
Dist. of Col.	1		15		3				43	4	1	1						1	1			2			3	75	D. of Col.
Totals	161	209	9849	207	1226	58	149	160	13750	518	1841	291	1	26	554	31	67	74	149	112	183	309	148	43	584	30700	Totals

Hope of Parts Jobbers Seen in Shop Operation

(Continued from Page 1)

Slow moving items of stock have been cleaned out as far as possible, sales forces stimulated and reinstructed, improved methods of stock keeping and cost accounting installed in some instances and a few new lines critically examined and taken on, some directly related to the automotive industry and some having not the slightest logical connection with it.

Just at the moment the rumor is current that more than one jobber has expressed himself as ready to divorce radio from his menage. However, others are decidedly pleased with the development of this department. Some jobbers are turning to motorboat devices, just as not long ago a number of local automobile distributors and dealers reached out to include motorboats themselves among their stocks, while others added aircraft.

Several jobbers are stocking electric clocks. Electric refrigerators began to be conned over long ago, but not much done about them. Everybody knows that some jobbers are doing fairly well with aircraft supplies—at least well enough to continue them in stock and to devote more or less energy to their merchandising.

Today the high light and saving grace of the general automotive supply jobber are his departments of shop equipment, mechanical shop service and replacement parts. On the other hand there are a few very successful jobbers in this city who submerge their parts section and who maintain no mechanical shop, but in these instances shop equipment sales stand out prominently.

Encouragement of their outlets, building them up by suggesting well-balanced stocks, keeping them from overstocking as a whole and rendering them real service whenever and wherever possible, are among the important steps being taken by the jobber to foster business of the kind that brings in profits. Here are what some of the leading jobbers in the field have to say on the situation:—

George B. Shearer, Jr., president of Gaul, Derr & Shearer Company, says "To hold his place in the picture, the automotive equipment jobber must keep moving, see to it that his various departments are up with the times, encourage and develop his outlets and feel his way for profitable new fields. We consider mechanical shop service for the trade absolutely essential to the success of an automotive supply jobber handling replacement parts. We went into it with some reluctance, not wishing to enter the machine shop trade; but we were practically driven into it, and it has brought to us many new accounts, thereby assisting in securing for the house a rapid turnover of this stock.

"We have taken on the line of Neptune outboard motors, which we consider is not a departure from the automotive field, but as yet have made no drive to increase sales volume for this item. As a large number of our customers are motorboat 'fans,' this line probably will fit well into our merchandising plans. We also have installed a department of motor clothing suitable for the shop mechanic, the worker in the service department of the car dealer, and the car washer, including such articles as overalls, rubber coats, aprons and boots and heavy apparel, such as lumberjackets. We are having fair volume in this department.

"It will probably take considerable time to develop our aircraft supplies department to the full. At present one man is devoting two days a week to its promotion and we shall have an exhibit at the aircraft show in Camden, N. J., the latter part of this month. Business as a whole with us is about even with last year."

F. E. Ginther, secretary and treasurer of the Swain-Hickman Company, jobbers of replacement parts, says: "I do not think the replacement parts jobber can operate successfully without a mechanical shop, as the work is of great service to many of his customers and tends to bring in new accounts and retain those already established. Such service as pressing off and on bearings, tuning up flywheels and shrinking gears, for instance, cannot be supplied by the average small shop, for it has not the equipment for these kinds of work, hence this patron is accustomed to depend on his parts jobber. Again, without a mechanical shop to grind and fit pistons, the replacement parts jobber would be obliged in many cases to carry pistons of all sizes in quantity to supply his trade.

"In order to hold his place the jobber must keep step with the times and note all the tendencies to change. While the parts business is not especially active just at this time, indications point to improved conditions for spring and summer."

Alben T. Evanson, president of the Parts Service Company, Philadelphia and Camden, N. J., says: "A mechanical shop for the trade undoubtedly helps to swell sales volume for the jobber. Any service that goes along with replacement parts tends to increase turnover. We originally handled parts without a mechanical shop, but found this accompanying service desirable and profitable. The trend in the trade is toward service.

"April has started out well with sales and January and February were ahead of last year's business, but we cannot say the same of March."

George P. Henderson, president of the Auto Gear and Parts Company, with headquarters at 1728 Fairmount Ave., and branch at 3744 Germantown Ave., says: "We have two mechanical shops, one at each store. We established the first one some five or six years ago. Now we find our mechanical shops an item of expense, rather than an aid to parts sales. We invested a lot of money in the shops, but because of keen competition, especially from a number of small retailers who sell to the garage men, they are no longer profitable."

D. D. Weiss, head of the Philadelphia Motor Accessories Company, has the following comment: "We have found that anything that improves his maintenance service, like suitable shop equipment, attracts the independent dealer. The automobile dealer, with new models coming in, is desirous of bettering his service department with the right tools and devices. That is a tendency of the times. We are different from some jobbers, as we are not much interested in promoting sales of replacement parts in volume. We are sentimentally opposed to the idea and we maintain no mechanical shop. Either through our individual good luck, or selling methods, our automotive business thus far in 1930 is ahead of the corresponding period of 1929, and our radio department is doing well. Recently we added a number of new lines and they are going along well."

E. P. Rotzell, head of the E. P. Rotzell Co., replacement parts and shop equipment, finds: "The time has come when I do not believe a parts jobber can get along without maintaining a mechanical shop. Among its advantages is the fact that it brings in both new and repeat business and has a tendency to keep the jobber from standing still and to place him among the progressive individuals in the trade."

CHRYSLERS WIN PAU RALLY

New York, April 11.—Finishing second and sixth in a field of sixty-two of the leading American and European cars, two Chrysler cars recently established a mark in the Pau Rally, a French reliability run that is recognized as one of the most severe tests in the automotive industry.

E. L. CORD OUTLINES POLICY OF AUBURN

Auburn, Ind., April 11.—Setting a new record high in sales and shipments by Auburn for the first quarter of 1930 is the sequence of a five-year policy of returning to the public the fruits of its success in better automobiles at less commensurate cost, E. L. Cord, president, said today.

"The unusual showing of Auburn in a most competitive period is indicative that the policy of the company has again been proved right. For the last five years the company has returned to the public the fruits of its success in better built automobiles at less commensurate cost.

"It has been our policy," Cord said, "to predicate our success at the beginning of the year, and to make the savings in increased production, economies of operation, and reduced overhead available to the public at once. This policy works in a cycle. By making greater values available to the public increased demand is effected, which in turn permits of greater economies."

THOMPSON PLANS LARGE SHOCK ABSORBER OUTPUT

Cleveland, O., April 11.—Thompson Products, Inc., is preparing to enter large production on its new Twincycle shock absorber after an extensive trial period during which time the product has been tested by many manufacturers.

It is planned at first to build the absorber for cars in the lightweight, popular price field. The company will make its first shipment shortly to a low price, large volume builder.

BETTER BUSINESS BUREAU MOVES TO NEW QUARTERS

New York, April 11.—The National Better Business Bureau, Inc., has moved its offices here to the new Chrysler Building.

Cumulative New Commercial Car Registration Table, February, 1929

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Dover	Fargo	Federal	Ford	G. M. C.	International	Mack	Pierce-Arrow	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Ala., 1929			104		8			1	93	4	17	1			4		1				1	4			1	239	Ala., '29
Ariz., 1929			64		16		1		72	10	22				3		3			5				1	1	198	Ariz., 1929
Ark., 1929			135		11		1	2	185	4	28				5		1				3	3			1	379	Ark., 1929
Cal., 1929	10		431		163		5	14	1177	65	37	17			63	3	10	26	5	8	9	32		1	143	2219	Cal., '29
Colo., 1929			116		35		1	1	96	15	28				6		3			1		6			1	309	Colo., '29
Conn., 1929	1	4	129	2	36		4	3	132	7	22	13	1		41	1		1	5	3	4	3				412	Ct., 1929
Del., 1929		1	32		3				42	3	4	2			3							1				91	Del., 1929
Fla., 1929		5	129		11			1	164	5	12	4			2					1	4	4				342	Fla., 1929
Ga., 1929		7	293		15			1	231	4	12	1			3						6	9			2	584	Ga., 1929
Idaho, 1929			16		9				32		6				3	1	3								3	73	Idaho, '29
Illinois, '29	5	19	613	105	178		14	22	824	112	275	27	2	5	53	2		13	6		26	19			153	2473	Illinois, '29
Ind., 1929		21	416	8	95			8	393	58	98	2	1	1	41		1		4	5	8	7			10	1177	Ind., 1929
Iowa		1	361	2	36		5	2	192	7	98	3			14	1				1	5	2				730	Iowa, '29
Ky., 1929		1	149	1	19		4		116	16	25	2		1	7		2			2	2	1			2	350	Ky., 1929
Maine, '29	1		57		8				79		4	1			1					3				1		155	Me., 1929
Md., 1929	6	1	112	1	18			2	119	16	17	29		1	16			1	7		1	7			8	362	Md., 1929
Mass'setts	19	10	216	5	56		8	4	404	48	38	30	3		50			4	6	2	9	9		1	16	938	Mass., '29
Mich., 1929	5	2	576	3	81		12	16	766	45	43	8	3		57	1	6			2	10	11			20	1667	Mich., '29
Minn., 1929			108	2	19		1	1	270	17	47	2			19		1			2	2	5		1		497	Minn., '29
Miss., 1929		1	80		6				53	1	11				1											153	Miss., '29
Mo., 1929	2	10	467	54	134		4	23	688	69	99	8			36	5	4	2		2	18	11			13	1649	Mo., 1929
Mont., 1929	3		81		30			1	140	10	38	1			8	1	2			2		2		1	5	325	Mont., '29
Neb., 1929		3	281		36		2		214	29	76	5			15					4		2		1	5	673	Neb., '29
Nev., 1929			22		12		1		42	1	4				2							1			4	89	Nevada
N. H., 1929			37		4		1		49	2			1		2						2					98	N. H., '29
N. J., 1929	19	13	366	5	49		11	15	484	53	37	34	6	3	33		2	7	6	5	19	24		6	87	1284	N. J., 1929
N. Mex., '29			26		2				28	2	3				2							1				64	N. M., 1929
N. Y., 1929	19	98	762	28	152		33	18	999	73	95	82	10	1	82	1	6	9	56	1	34	43			63	2665	N. Y., '29
N. Car., '29	1		350		60		3	1	339	21	20	7			4	1	1		2	1	10	4			3	828	N. C., '29
N. Dak., '29			42		4				47	6	42				5		1			1	1					149	N. D., 1929
Ohio, 1929	6	11	616	4	68		11	14	671	35	63	18	6	2	37				7	7	30	30		9	31	1676	Ohio, '29
Okla., '29		4	325	8	63		6	3	366	17	69	4			11		1			4	10	13		1	4	909	Okla., '29
Ore., 1929			100		23		1	4	159	26	16	3			9	2	1			1	3	4			4	356	Ore., 1929
Penna., '29	18	20	593	18	145		16	9	950	61	69	42	2	13	66	12	4	14	18	7	22	30		1	29	2159	Penn., '29
R. Isl., '29	9		30		23		2	2	48	5	6	4			12					1	1	1				144	R. I., '29
S. Car., '29		1	135		10				111	6	14				1						1	1				280	S. C., '29
S. Dak., '29			73	2	27				102	11	80	1			12		4				2	1		2	2	319	S. D., '29
Tenn., 1929			159		14			2	106	18	9	7			9					1	1	4				330	Tenn., '29
Tex., 1929	4	11	786	2	119		4	6	910	50	161	12	1	6	35		3			2	11	18		3	5	2149	Tex., 1929
Utah, 1929			32		9				45		5	1														92	Utah, '29
Vt., 1929			32		9		1		44	3	7	1			4				1	3						105	Vt., 1929
Va., 1929	1		165	1	21			5	220	18	17				9	3	1		2		1	5				469	Va., 1929
Wash., 1929			52		24		2	1	152	12	15	8		1	5		3			1	1	10			10	297	Wash., '29
W. Va., '29			86	3	13		1	1	96	8	10				10		1		2	1		2			2	236	W. Va., '29
Wis., 1929			168	18	28		3	4	347	15	40	3			17		3	10	7	3	6				18	694	Wis., 1929
Wyo., 1929			15		12				22	5	9				1											64	Wyo., '29
D. of C., '29			38	3	1				76	1	1	1			2						2	1				126	D. C. '29
Cum., 1929	129	244	6976	275	1915		158	187	12895	994	1849	384	36	34	821	34	68	87	134	82	265	331		33	646	31577	Cum., 1929

MOTOR STOCKS NOW PRICED TO GIVE LIBERAL YIELDS

(Continued from Page 1)

would, at the present levels, cost a total of $602, on which the cash return would be $33, equivalent to a return of 5.5 per cent.

An equal investment in the shares of four dividend-paying motor truck and taxicab manufacturers at the current prices would return 6.6 per cent. on the investment. Mack Trucks, Inc., with the stock now selling at around $84 a share and paying $6, gives a yield of 7.1 per cent. This same yield is given by the Checker Cab Manufacturing Company, the stock of which is priced at around $58 and pays $4.20 a share. Federal Truck, priced at $12 a share, returned 6.5 per cent., while White at $41 a share and a dividend of $2, yields 4.9 per cent.

One share of stock in each of these four companies would cost $195 and would return $13 a year to the investor, or 6.6 per cent.

An equal investment in the shares of twelve accessory and equipment companies covered by the compilations at the current prices and dividends would return to the investor 5.6 per cent.

Borg-Warner, priced at $48 a share and paying $4, returns 8.3 per cent. on the investment, while Eaton Axle and Spring at $34, with a dividend of $3, returns 8.8 per cent. Bendix Aviation, priced at $55 and pays $2, for a return of 3.6 per cent., while Electric Auto-Lite, at $111 a share, yields 5.4 with its $6 dividend.

One share in each of the twelve accessory and equipment companies would cost $546 and would pay $30.50 in dividends, equivalent to 5.6 per cent. on the investment.

Following are the current market prices and dividends of some of the representative motor stocks:

PASSENGER CARS

	Price.	Dividend.	% Yield.
Auburn	$260	*$4.00	*1.6
Chrysler	41	3.00	7.3
Gen. Motors	53	3.00	5.7
Hupp	25	2.00	8.0
Hudson	56	5.00	8.9
Marmon	28	2.00	7.1
Nash	51	6.00	11.8
Packard	22	1.00	4.5
Reo	14	.80	5.6
Studebaker	42	5.00	11.9
Willys-Overland	10	1.20	12.0
Totals	$602	$33.00	5.5

*Plus 8 per cent. stock.

TRUCKS AND TAXICABS

Checker	$58	$4.20	7.1
Federal	12	.80	6.5
Mack	84	6.00	7.1
White	41	2.00	4.9
Totals	$195	$13.00	6.6

ACCESSORIES AND EQUIPMENT

Bendix	$55	$2.00	3.6
Borg-Warner	48	4.00	8.3
E. G. Budd	14	1.00	7.1
Budd Wheel	14	1.00	7.1
Eaton Axle	34	3.00	8.8
Elec. Auto Lite	111	6.00	5.4
Houdaille-Hers'ey	28	2.00	7.1
Kelsey-Hayes	38	2.00	5.3
Martin-Rockwell	51	2.00	3.9
Murray Corp.	44	2.00	8.7
Stewart-Warner	44	2.50	5.7
Timken R. B.	86	3.00	3.5
Totals	$546	$30.50	5.6

THERMOID SALES GAINED 67% DURING MARCH

Trenton, N. J., April 11.—Despite the fact that automobile production is currently showing a 30 per cent. decrease as compared with a year ago, increased sales are reported by the Thermoid Company, one of the country's largest manufacturers of asbestos products, including brake lining, according to Robert J. Stokes, president. A heavier demand from the automotive replacement market is the most important factor in the company's improved position.

Thermoid's sales in March, 1930, showed an increase of 67 per cent. as compared with the preceding month and an increase of 6 per cent. as compared with March, 1929.

LONGVIEW-KELSO DAILY MOTOR FREIGHT SERVICE

Longview, Wash., April 11.—H. F. Martin and A. J. Martin, operators of the Martin Transfer Company of this city, have established daily motor freight service between Longview and Kelso, Wash., and Portland, Ore. Six-cylinder, heavy duty Pageol trucks will be employed on the run. The line will operate under an interstate permit. One round trip will be made daily.

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS

MAKE AND MODEL	Weight—5-P. Sedan	Wheel Base	Engine Make	Fan Belt Type	Thermostat Used	Valve Arrangement	Cylinders	Bore and Stroke	Piston Disp.	Compression Ratio	Tax H. P.	Brake, H.P. and Peak R. P. M.	Pist. Make or Material	No. Main Br.	Oil Purifier	Fuel Clean'r	Carburetor	Air Cleaner
Auburn 6-85	3255	120	Lyc	V	Yes	L	6	2⅞x4¾	185	*5.16	19.8	65@3400	*Alum	4	—	—	Sch	—
Auburn 8-95	3510	125	Lyc	V	Yes	L	8	2⅞x4¾	246	*5.15	26.4	93@3300	*Alum	5	Yes	AC	Sch	—
Auburn 125	3908	130	Lyc	V	Yes	L	8	3¼x4½	299	*5.25	33.8	125@3600	*Alum	5	Yes	AC	Sch	—
Blackhawk 6	4320	127½	Own	V	Bish-Bab	O	6	3⅜x4½	241.5	5.0	27.3	85@3150	*Alum	7	Wal	AC	Zen	AM
Blackhawk 8	4185	127½	Own	V	Bish-Bab	L	8	3 x4¾	268.5	5.50	28.8	88@3200	*Alum	5	Wal	AC	Zen	AM
Buick 40	3881	118	Own	V	Yes	O	6	3 1/16x4⅝	257.5	4.51	28.4	80½@2800	CI	4	AC	AC	Mar	AC
Buick 50 and 60	4443	124-132	Own	V	Yes	O	6	3⅜x5	331.0	4.37	33.75	98@2800	CI	4	AC	AC	Mar	AC
Cadillac 353	5055	*210	Own	V	Yes	LV	8	3⅜x4 1/16	353	4.7	36.5	95@3000	CI	3	AC	Gas	Own	—
Cadillac 452	6100	148	Own	V	Yes	O	16	3 x4	452.0	5½	57.5	165@3400	NCI	5	AC	Gas	Own	None
Chevrolet	2500	107	Own	V	Yes	O	6	3 1/16x3¾	194.0	5.01	26.3	46@2600	CI	3	—	AC	Car	AC
Chrysler 6	2745	*169	Own	V	Yes	L	6	3¼x4¼	195.6	5.2	23.44	62@3200	Alum	4	—	Yes	Car	—
Chrysler 77	3770	*177½	Own	V	Yes	L	6	3⅜x5	268.4	5.0	27.34	93@3200	*Alum	7	Yes	AC	Str	Un
Chrysler 70	3435	*168½	Own	V	Yes	L	6	3⅜x5	268.4	5.0	27.34	93@3200	*Alum	7	Yes	AC	Str	Un
Chrysler 66	2850	*163¼	Own	V	—	L	6	3⅛x4¾	218.6	5.1	23.43	68@3000	Alum	7	—	AC	—	—
Chrysler Imperial	4335	*191	Own	V	Yes	L	6	3⅝x5	309.3	5.0	31.54	100@3200	Alum	7	Yes	AC	Str	Un
Cord (Fr. Wh. Dr.)	4530	137½	Lyc	V	—	L	8	3¼x4½	298.6	5.25	33.8	125@3600	*Alum	5	Yes	AC	Sch	—
De Soto 6	2645	*168	Own	V	Yes	L	6	3 x4⅛	174.9	5.2	21.6	57@3400	*Alum	4	Yes	AC	Str	Un
De Soto 8	2965	*177	Own	V	Yes	L	8	2⅞x4	207.7	5.2	26.45	70@3400	Alum	5	Yes	AC	Str	Un
Dodge Six	2900	112	Own	V	Bish-Bab	L	6	3⅜x3⅞	208	5.18	27.3	58@3000	*Alum	7	Yes	AC	Str	Yes
Dodge Senior	3572	120	Own	V	Yes	L	6	3⅜x4½	241.5	5.5	27.3	78@3000	*Alum	7	Yes	AC	Str	Han
Dodge Six D D	2738	*169	Own	V	Yes	L	6	3¼x4⅛	189.8	5.2	23.4	60@3400	Alum	4	Yes	Yes	Str	Un
Dodge 8	3113	*177	Own	V	Yes	L	8	2⅞x4¼	220.7	5.2	26.5	75@3400	Alum	5	No	No	Car	—
Durant 6-14	2950	*172¼-176	Con	V	Bish-Bab	L	6	3¼x4	199	5.32	25.4	58@3100	Alum	5	Yes	No	Str	—
Durant 6-17	3290	*175¾-179½	Con	V	Bish-Bab	L	6	3⅜x4⅝	248	5.06	27.34	70@3000	*Alum	4	AC	AC	Str	AC
Elcar 6-75	2942	117	Lyc	V	Yes	L	6	2⅞x4¾	185	5.25	19.8	61@3000	*Alum	7	AC	AC	Str	AC
Elcar 140 and 130	——	135-130	Con	V	Yes	L	6	3⅜x4½	322	5.25	36.45	140@3300	*Alum	4	Yes	Gas	Sch	—
Elcar 8-95-96	3299	123	Lyc	V	Yes	L	8	2¾x4¾	246.7	5.25	26.5	90@3000	*Alum	5	Yes	Gas	Sch	—
Erskine	2950	114	Own	V	Yes	L	6	3¼x4⅛	205.3	5.20	25.4	70@3200	CI	5	—	Gas	Sch	—
Essex	2805	113	Own	V	—	†L	6	2¾x4½	160.4	5.8	18.15	60@3600	Alum	4	Yes	Ste	Sch	—
Ford A	2336	103½	Own	V	—	L	4	3⅞x4¼	200.5	4.22	24.03	40@2200	Alum	3	—	Ste	Mar	AC
Franklin 145	3930	125	Own	—	Bish-Bab	*O	6	3½x4¾	274	5.3	29.4	87@3000	Alum	7	AC	AC	Zen	—
Franklin 147	4060	132	Own	—	Bish-Bab	*O	6	3½x4¾	274	5.3	29.4	87@3000	Alum	7	AC	AC	Str	AC
Gardner 136	3330	122	Lyc	V	Yes	L	6	2⅞x4¾	185	5.05	19.8	70@3500	*Alum	4	Yes	Gas	Sch	AM
Gardner 140	3500	125	Lyc	V	Yes	L	8	2⅞x4¾	246.6	5.15	26.5	90@3300	*Alum	5	Yes	Gas	Sch	AM
Gardner 150	3890	130	Lyc	V	Yes	L	8	3¼x4½	298.6	5.25	33.8	126@3300	*Alum	5	Yes	Gas	Sch	AM
Graham Std. 6	3175	115	Own	F	Yes	L	6	3⅛x4½	207	5.41	23.44	66@3200	*Alum	7	No	AC	DL	AC
Graham Spl. 6	3390	115	Own	F	Yes	L	6	3¼x4½	224	5.49	25.35	76@3400	*Alum	7	AC	AC	DL	AC
Graham Std. 8	3795	122	Own	V	Yes	L	8	3¼x4½	298	5.20	33.80	100@3400	*Alum	5	AC	AC	DL	AC
Graham Spl. 8	3875	122	Own	V	Yes	L	8	3¼x4½	298	5.20	33.80	100@3400	*Alum	5	AC	AC	DL	AC
Graham Cust. 8	4300	127	Own	F	Bish-Bab	L	8	3⅜x4½	322	5.41	36.45	120@3200	*Alum	5	AC	AC	DL	AC
Graham Cust. 8	4405	137	Own	F	Bish-Bab	L	8	3⅜x4½	322	5.41	36.45	120@3200	*Alum	5	AC	AC	John	AC
Hudson Super 8	3200	119-126	Own	V	—	L	8	2¾x4½	213.8	5.8	24.2	80@3600	Alum	5	—	Ste	Mar	AC
Hupmobile S	3640	111	Own	V	Yes	L	6	3¼x4¼	211.6	4.8	25.3	70@3200	CI	4	Yes	Ste	Str	Han
Hupmobile C	3725	121	Own	V	Bish-Bab	L	8	3 x4¾	268.6	5.05	28.8	100@3200	CI	5	Han	Gas	Str	AM
Hupmobile H	4000	*175	Own	—	No	L	8	3½x4¾	365.0	5.2	39.2	133@3400	Alum	5	—	Ste	Str	AM
Jordan St. Line 80	3590	120	Con	V	Bish-Bab	L	8	2⅞x4¾	246.7	5.1	26.5	80@3000	*Alum	5	Ste	AC	Str	AC
Jord'n G. Ninety 8	3600	125	Con	V	Pines	L	8	3 x4¾	268.6	5.1	28.9	85@3200	*Alum	5	Ste	Ste	Str	AM
Jordan Sp'dway Z	4575	145	Con	V	Pines	L	8	3⅜x4½	322.2	5.4	36.5	114@3200	*Alum	5	Yes	Yes	Sch	Yes
Jordan Line 70 U	3500	120	Con	V	—	L	8	2⅞x4¾	246.7	5.1	26.5	80@3000	*Alum	5	No	Yes	Til	Yes
Kissel 6-73	3260	117	Own	V	Leech	L	6	2⅞x4¾	185	5.15	19.8	70@3500	*Alum	4	AC	Gas	Sch	AC
Kissel 8-95	3495	125	Own	V	Leech	L	8	2⅞x4¾	246	5.15	26.5	95@3400	*Alum	5	AC	Gas	Sch	AC
Kissel 8-126	4450	132-139	Own	V	Leech	L	8	3¼x4½	298	5.35	33.8	126@3600	*Alum	5	AC	Gas	Sch	AC
La Salle	4645	*201	Own	V	Yes	LV	8	3 1/16x4 1/16	340	4.7	35.1	90@3000	CI	3	AC	Gas	Own	—
Lincoln	5010	136	Own	V	—	L	8	3½x5	384	4.9	39.2	90@2800	Alum	5	Yes	Own	Str	Un
Marmon Eight 69	2897	*179½	Own	V	—	L	8	2 13/16x4¼	211.2	5.25	25.4	84@3400	Alum	5	AC	AC	Sch	AC
Marmon Eight 79	3182	*191	Own	V	—	L	8	3⅜x4¾	303.2	5.50	32.5	110@3400	Alum	5	AC	AC	Sch	AC
Marmon Big Eight	4363	*202	Own	V	—	L	8	3¼x4¾	315.2	5.50	33.8	125@3400	Alum	5	AC	AC	Sch	AC
Marmon-Roosevelt	2833	*172	Own	V	Yes	L	8	2¾x4¼	201.9	5.25	24.2	77@3400	Alum	5	—	—	Str	AC
Marquette 30	3076	114	Own	V	Yes	L	6	3 1/16x4⅝	212.8	5.2	23.4	67½@3000	CI	4	AC	AC	Mar	AC
Nash Single Six	2850	114¼	Own	V	Pines	L	6	3 1/16x4⅜	201.3	5.00	23.4	60@2800	*Alum	7	AC	AC	Car	AC
Nash Twin Ig. 6	3535	118-128¼	Own	V	Pines	L	6	3⅜x4½	242	5.00	27.3	74@2800	*Alum	7	AC	AC	Mar	AC
Nash Twin Ig. 8	4000	124-133	Own	V	Pines	L	8	3¼x4½	298.6	5.25	33.8	100@3200	*Alum	9	AC	AC	Mar	AC
Oakland V-8	3095	117	Own	V	Yes	H	8	3 1/16x3⅜	251.0	5.10	37.8	85@3200	CI	3	—	AC	Mar	AC
Oldsmobile	2940	113½	Own	V	—	L	6	3⅛x4 1/16	197.5	5.2	24.4	62@3000	CI	4	AC	AC	Joh	AC
Packard 726-733	*4265	127½-134½	Own	V	Pines	L	8	3 3/16x5	320	—	32.5	90@3200	*Alum	9	Yes	Yes	Own	—
Packard 740-745	*4560	140½-145½	Own	V	Pines	L	8	3½x5	384.8	—	39.2	106@3200	*Alum	9	Yes	Yes	Own	—
Peerless St. 8	3560	118	Own	V	Yes	L	8	2⅞x4¾	246.0	—	26.45	85@3000	——	——	——	——	——	——
Peerless Master 8	4200	125	Own	V	Pines	L	8	3⅝x4½	322	5.0	36.4	120@3200	*Alum	5	Yes	AC	Sch	AC
Peerless Custom 8	4800	138	Own	V	Pines	L	8	3⅜x4½	322	5.0	36.4	110@3200	*Alum	5	Yes	AC	Sch	AC
Pierce-Arrow 132	4523	132⅜	Own	V	Yes	L	8	3⅜x4¾	340	5.0	36.45	115@3000	*Alum	9	Yes	Yes	Str	Yes
Pierce-Arrow 125	4361	139	Own	V	Yes	L	8	3½x4¾	366	5.0	39.2	125@3000	*Alum	9	Yes	Yes	—	Yes
Pierce-Arrow 126	4818	144	Own	V	Yes	L	8	3½x5	385	5.0	39.2	132@3000	*Alum	9	Yes	Yes	—	Yes
Plymouth	2555	*169	Own	V	—	†L	4	3⅝x4¼	175.4	4.6	21.03	45@2800	Alum	3	—	—	Car	Un
Pontiac	2695	110	Own	V	Yes	L	6	3 1/16x3⅞	200.0	4.9	26.3	60@3000	St St	3	—	AC	Mar	—
Reo 15	3280	115	Con	V	Yes	L	6	3⅜x4	214.7	5.5	27.3	60@2800	*Alum	7	—	AC	Sch	Un
Reo 20	3875	120	Own	V	Yes	L	6	3⅜x5	268.3	5.3	27.3	80@3200	Alum	7	Han	—	Sch	Un
Reo 25	3720	124	Own	V	Yes	L	6	3⅜x5	268.3	5.3	27.3	80@3200	Alum	7	Han	—	Sch	Un
Ruxton Fr.Wh.Dr.	4000	130	Own	V	Yes	L	8	3 x4⅜	268.6	5.09	28.8	100@3400	*Alum	5	Yes	AC	Zen	AM
Studebaker Dict. 6	3080	115	Own	V	Yes	L	6	3⅜x4 1/16	221.4	4.8	27.0	68@3200	CI	4	Yes	AC	Str	—
Studebaker Dict. 8	3095	115	Own	V	Yes	L	8	3 1/16x3¾	221.0	5.0	30.0	72@3200	*Alum	9	Yes	AC	Str	AM
Studebaker Com. 6	3235	120	Own	V	Yes	L	6	3⅜x4⅝	248.3	4.8	27.3	75@3000	CI	4	Han	AC	Str	—
Studebaker Com. 8	3310	120	Own	V	Pines	L	8	3 1/16x4¼	250.4	5.1	30.0	80@3500	*Alum	9	Han	AC	Str	AM
Studebaker Pres. 8	*4110	125-135	Own	V	Pines	L	8	3½x4⅜	337	5.05	39.2	115@3200	*Alum	5	Han	AC	Str	AM
Stutz	4718	134½-145	Own	C	Yes	O	8	3¼x4½	322	5.25	36.5	80@3300	*Alum	9	Wal	Gas	Zen	AM
Viking Eight	3620	125	Own	V	Yes	HV	8	3⅜x3⅝	259.5	5.1	36.5	81@3200	CI	3	Own	AC	Joh	AC
Windsor 6-69	3195	120	Con	V	Yes	L	6	2⅞x4¾	185	4.78	19.8	47.5@2600	*Alum	4	AC	—	Str	—
Windsor 6-72	2930	120	Con	V	Yes	L	6	3⅜x4	215	4.94	27.3	66@3200	*Alum	7	AC	—	Str	—
Windsor 6-77	2930	120	Con	V	Yes	L	6	3⅜x4	215	4.94	27.3	66@3200	*Alum	7	AC	—	Str	—
Windsor 8-85	3600	125	Con	V	Yes	L	8	3 x4¾	269	5.0	28.8	88@3200	*Alum	5	AC	Gas	Str	AM
Windsor 8-92	3600	125	Con	V	Yes	L	8	3 x4¾	269	5.0	28.8	88@3200	*Alum	5	AC	Gas	Str	AM
Whippet 96 A	2412	103¼	Own	V	No	L	4	3⅛x4¾	145.7	5.4	15.6	40@3200	*Alum	3	No	No	Til	No
Whippet 98 A	2693	112½	Own	V	Var	L	6	3¼x3⅞	178.3	5.12	23.4	50@3000	*Alum	7	No	Til	Til	Til
Willys Six 98-B	2641	110	Own	V	Var	L	6	3¼x3⅞	193	5.6	25.3	65@3400	CI	4	No	Til	Til	Til
Willys-Knt. 66-B	3934	120	Own	V	Var	K	6	3⅜x4¾	255	5.5	27.3	87@3200	*Alum	7	Ski	Til	Til	Til
Willys-Knt. 70-B	2973	112½-115	Own	V	Var	K	6	2 13/16x4⅜	177.9	5.5	20.7	53@3000	*Alum	7	Ski	Til	Til	Til

ABBREVIATIONS

Weight—*On Studebaker 135-in. wheel base 4305 pounds.

Wheel Base—*Over all length of chassis instead of wheel base.

Engine Make—Con, Continental; Lyc, Lycoming.

Fan Belt Type—V, V-type; F, flat; C, cone.

Thermostat—Bish-Bab, Bishop & Babcock; Leech, Leech Fulton; Pines, Pines Winterfront.

Valve Arrangement—L, L head; H, horizontal; O, overhead; K, sleeve valve.

*Air cooled.

†Thermo Syphon water circulation.

Piston Material—*Alum, aluminum with invar struts; Alum, aluminum alloy; JI, cast iron; S St, semi steel.

Oil Purifier—Pur, Purolator; Wal, Wall; HW, Rich Tool Company; Han, Handy; AC, AC Spark Plug Company; Ski, Skinner.

Fuel Cleaner—AC, AC Spark Plug Company; Gas, Gascolator; Ste, Stewart-Stromberg; *Til, Tillotson; Mar, Marvel; John, Johnson; Car, Carter; DL, Detroit Warner; Til, Tillotson.

Carburetor—Sch, Wheeler Schebler; Str, Lubricator; Zen, Zenith.

Air Cleaner—AC, AC Spark Plug Company; AM, Air Maze; Un, United; Han, Handy; Til, Tillotson.

Front End Drive—Link, Link Belt; Tex, Textolite; Cel, Celeron; Ram, Ramsey; Whit, Whitney Chain; Diam, Diamond Chain.

Ignition, Generator and Starter—Aut-L, Auto-Lite; Del-R, Delco-Remy; N E, North East; Dyn, Dyneto.

*Bendix starter drive used.

Clutch—Borg, Borg & Beck; Br-L, Brown-Lipe; Rock, Rockford Machine; Russ, Russel.

Gearset—War G, Warner Gear Company; Detr, Detroit Gear; Mun, Muncie Gear. *Three or four speed gear sets as shown are available for either model.

Universals—Un P, Universal Products Company; Spic, Spicer Mfg. Corporation; M M, Mechanics Machine; Cle, Cleveland.

Rear Axle—Col, Columbia; Sal, Salisbury; steeldraulic; Bendix, Bendix Brake Corporation. *Bendix front; own rear.

Steering Gear—Ross, Ross Gear and Tool; Clar, Clark Equipment Company; Tim, Timken.

Brakes—H, hydraulic; M, mechanical; SD, Company; Gem, Gemmer; Sag, Saginaw; War, Warner.

OF PRESENT AMERICAN PASSENGER CAR MODELS

Make and Model	Front End Drive	Ignition System	Gen. and Starter	Clutch	Gear Set and Speeds	Universals	Rear Axle	Ratio	Brakes	Steering Gear	Rear Springs	Spring Shackles	Chassis Lubric.	Tires
Auburn 6-85	Link	Del-R	*Del-R	Long	War 3	Un P	Col ½	4.9	H	Ross	S 56¾	Own	Bijur	18x5.50
Auburn 8-95	Link	Del-R	*Del-R	Long	War 3	Un P	Col ½	4.7	H	Ross	S 56¾	Own	Bijur	18x6.00
Auburn 125	Link	Del-R	*Del-R	Long	Detr 3	Un P	Col ½	4.45	H	Ross	S 56¾	Own	Bijur	18x6.50
Blackhawk 6	Link	Del-R	Del-R	Borg	Detr 4	Un P	Sal ½	4.75	H	Gem	S 60	Own	Bijur	31x6.00
Blackhawk 8	Link	Del-R	*Del-R	Borg	Detr 4	Un P	Sal ½	†4.75	H	Gem	S 60	Own	Bijur	31x6.00
Buick 40	Tex	Del-R	Del-R	Own	Own 3	Own	Own ¾	4.45	M	Sag	S 55	Own	Al-Z	23x5.50
Buick 50 and 60	Tex	Del-R	Del-R	Own	Own 3	Own	Own ¾	4.45	M	Sag	S 58¼	Own	Al-Z	19x6.50
Cadillac 353	Chain	Del-R	Del-R	Own	Own 3	Spic	Own ¾	5.08	Own-M	Own	S 60	Own	Alem	19x7.00
Cadillac 452	Chain	Del-R	Del-R	Own	Own 3	Spic	Own ¾	4.39	Own	Own	S 60	Own	Alem	19x7.00
Chevrolet	Var	Del-R	*Del-R	Own	Own 3	Own	Own ½	3.82	M	Own	S 54	Tryon	Alem	4.75x19
Chrysler 6	Chain	Del-R	Del-R	Own	Own 3	Un P	Own ½	4.7	H	War	S 53⅝	——	——	5.00x19
Chrysler 77	Chain	Del-R	Del-R	Own	Own 4	Un P	Own ½	3.82	H	Ross	S 58¼	Rub B	Al-Z	18x6.00
Chrysler 70	Chain	Del-R	Del-R	Own	Own 4	Un P	Own ½	3.82	H	War	S 57¾	Rub B	Al-Z	18x5.50
Chrysler 66	Chain	Del-R	Del-R	Own	Own 3	Un P	Own ½	4.70	H	War	S 54⅝	Sil B	Alem	18x5.50
Chrysler Imperial	Chain	Del-R	Del-R	Own	Own 4	Un P	Own ½	3.77	H	Ross	S 58⅜	Rub B	Al-Z	18x7.00
Cord (Fr. Wh. Dr.)	Link	Del-R	*Del-R	Long	Detr 3	UnP&MM	Col F	4.41	H	Gem	S 62	Own	Bijur	18x7.00
De Soto 6	Chain	Del-R	*Del-R	Borg	Own 3	Un P	Own ½	4.7	H	War	S 54	Tryon	Al-Z	5.00x19
De Soto 8	Chain	Del-R	Del-R	Borg	Own 3	Un P	Own ½	4.9	H	War	S 54⅝	Sil B	Al-Z	5.25x19
Dodge Six	Chain	Del-R	*Del-R	Borg	Own 3	Spic	Own ½	4.72	H	Gem	S 54	Own	Al-Z	19x5.50
Dodge Senior	Chain	Del-R	*Del-R	Borg	Own 4	M M	Own ½	4.45	H	Gem	S 55½	Own	Al-Z	19x6.00
Dodge Six D D	Chain	Del-R	Del-R	Borg	Own 3	Un P	Own ½	4.9	H	War	S 53¾	Tryon	Al-Z	5.00x19
Dodge 8	Chain	Del-R	Del-R	Borg	Own 3	Un P	Own ½	4.6	H	War	S 54⅝	Sil B	Al-Z	5.50x18
Durant 6-14	Chain	Aut-L	*Aut-L	Borg	Own 3	Spic	Own ½	4.4	S D	Own	S 55	Tryon	Alem	5.00x29
Durant 6-17	Chain	Aut-L	*Aut-L	Borg	Own 4	Spic	Own ½	3.72	S D	Own	S 55	Tryon	Alem	5.50x29
Elcar 6-75	Link	Del-R	*Del-R	Long	War-G 3	Spic	Sal ½	4.88	H	Ross	S 53½	Belf	Alem	29x5.00
Elcar 140 and 130	Link	Del-R	*Del-R	Long	War-G 4	Spic	Sal ½		H	Ross	S 57	Belf	Alem	7.00x30
Elcar 8-95-96	Link	Del-R	*Del-R	Long	War-G 3	Spic	Sal ½	4.90	H	Ross	S 56	Belf	Alem	29x5.50
Erskine Six	Whit	Del-R	*Del-R	Long	War-G 3	Spic	Own ½	4.78	Bendix	Ross	S 54	Tryon	Alem	5.25x19
Essex	Chain	Aut-L	*Aut-L	Own	Own 3	Spic	Own ½	5.4	Bendix	Gem	S 54⅝	Own	Alem	5.00x19
Ford A	Cel	Own	*Own	Own	Own 3	Own	Own ¾	3.7	M	Own	S Tr	Own	Al-Z	4.75x19
Franklin 145	Ram	Del-R	*Del-R	Br-L	*Detr 4	Spic	Own ½	4.54	H	Gem	El 42	None	Al-Z	6.50x19
Franklin 147	Ram	Del-R	*Del-R	Br-L	War-G 3	Spic	Own ½	4.54	H	Gem	El 42	None	Al-Z	6.50x19
Gardner 136	Link	Del-R	*Del-R	Borg	War-G 4	Spic	Col ½	4.45	H	Ross	S 54	O-N	Alem	5.50x29
Gardner 140	Link	Del-R	*Del-R	Borg	War-G 3	Spic	Col ½	4.45	H	Ross	S 54	O-N	Alem	5.50x29
Gardner 150	Link	Del-R	*Del-R	Borg	War-G 3	Spic	Col ½	4.45	H	Ross	S 57	O-N	Alem	6.50x30
Graham Std. 6	Link	Del-R	*Del-R	Long	War-G 3	Un P	Cla ½	4.7	H	Ross	S 54	Tryon	Al-Z	5.25x19
Graham Spl. 6	Link	Del-R	*Del-R	Long	War-G 4	Un P	Sal ½	3.91	H	Ross	S 54	Rub	Al-Z	5.50x18
Graham Std. 8	Link	Del-R	Del-R	Long	War-G 3	Un P	Sal ½	4.45	H	Ross	S 56	Rub	Al-Z	6.00x18
Graham Spl. 8	Link	Del-R	Del-R	Long	War-G 4	Un P	Sal ½	3.90	H	Ross	S 56	Rub	Al-Z	6.00x18
Graham Cust. 8	Link	Del-R	Del-R	Long	War-G 4	Un P	Cla ½	3.64	H	Ross	S 58	Own	Bijur	6.50x19
Graham Cust. 8	Link	Del-R	Del-R	Long	War-G 4	Un P	Cla ½	3.92	H	Ross	S 58	Own	Bijur	6.50x19
Hudson Super 8	Chain	Aut-L	*Aut-L	Own	Own 3	Spic	Own ½	4.6	Bendix	Gem	S 54⅝	Own	Alem	5.50x18
Hupmobile S	Chain	Aut-L	*Aut-L	Borg	Detr 3	M M	Sal ½	4.7	S D	Ross	S 53	Tryon	Alem	29x5.25
Hupmobile C	Chain	Aut-L	*Aut-L	Long	Detr 3	Un P	Own ½	4.36	S D	Ross	S 54	Own	Alem	31x6.00
Hupmobile H	Chain	Aut-L	*Aut-L	Long	Detr 3	Un P	Own ½	4.07	S D	Ross	S 57	Own	Alem	6.50x19
Jordan St. Line 80	Chain	Aut-L	*Aut-L	Long	War-G 3	Cle	Col ¾	4.9	H	Gem	S 55¾	O-N	Alem	5.50x28
Jordan Grt. Ninety 8	Chain	Aut-L	*Aut-L	Long	War-G 3	Cle	Col ½	4.45	H	Gem	S 55¾	O-N	Alem	6.00x30
Jordan Sp'dway Z	Chain	Aut-L	*Aut-L	Borg	War-G 4	Spic	Col ½	3.92	H	Gem	S 55¾	O-N	Alem	7.00x18
Jordan Line 70 U	Chain	Aut-L	*Aut-L	Long	War-G 3	Cle	Col ½	4.9	M	Ross	S 55¾	O-N	Alem	5.50x28
Kissel 6-73	Link	Del-R	*Del-R	Borg	War-G 3	M M	Col ½	4.89	H	Ross	S 57	Rub B	Alem	6.00x30
Kissel 8-95	Link	Del-R	*Del-R	Borg	War-G 4	M M	Col ½	3.92	H	Ross	S 57	Rub B	Alem	6.00x30
Kissel 8-126	Link	Del-R	*Del-R	Borg	War-G 4	M M	Tim ½	4.09	H	Ross	S 60	Rub B	Alem	7.00x30
La Salle 340	Chain	Del-R	Del-R	Own	Own 3	Spic	Own ¾	4.54	Own-M	Own	S 58	Own	Alem	6.50x19
Lincoln	Chain	Del-R	Del-R	Own	Own 3	Spic	Tim F	4.58	Bendix	Own	S 60	Own	Alem	7.00x19
Marmon Eight-69	Diam	Del-R	*Del-R	Rock	War-G 3	Spic	Sal ½	4.9	Bendix	Ross	S 56⅛	Rub B	*Al-Z	29x5.50
Marmon Eight-79	Diam	Del-R	*Del-R	Rock	Detr 3	Spic	Sal ½	4.7	Bendix	Ross	S 60	Rub B	*Al-Z	31x6.00
Marmon Big 8	Diam	Del-R	*Del-R	Rock	War-G 4	Spic	Sal ½	4.81	Bendix	Ross	S 60	Rub B	*Al-Z	31x6.50
Marmon-Roosevelt	Diam	Del-R	*Del-R	Rock	War-G 3	Spic	Sal ½	4.9	Bendix	Ross	S 54⅛	Tryon	Al-Z	29x5.50
Marquette 30	Link	Del-R	Del-R	Own	Own 3	M M	Own ½	4.54	M	Sag	S 54½	Tryon	Al-Z	28x5.25
Nash Single Six	Cel	Aut-L	*Aut-L	Borg	Own 3	Fab	Own ½	4.7	S D	Ross	S 50⅞	Tryon	Alem A	5.00x29
Nash Twin Ig. 6	Cel	*Aut-L	*Aut-L	Borg	Own 3	Own	Own ½	4.5	Bendix	Gem	S 54	Own	Bijur	*5.50x29
Nash Twin Ig. 8	Diam	*Aut-L	*Aut-L	Borg	Own 3	Own	Own ½	4.5	Bendix	Gem	S 56¾	Own	Bijur	6.50x31
Oakland V-8	Chain	Del-R	Del-R	Own	Own 3	MM	Own ½	4.42	M	Sag	S 54½	Tryon	Z	5.50x28
Oldsmobile	Var	Del-R	Del-R	Borg	Mun 3	Un P	Own ½	4.54	Own	Sag	S 54½	Tryon	Alem	5.25x28
Packard 726-733	Chain	N E	*Dyn	Own	Own 4	M M	Own ½	4.38	Own	Own	S 56	Own	Cen	6.00x20
Packard 740-745	Chain	N E	*Dyn	Own	Own 4	M M	Own ½	4.38	Own	Own	S 62	Own	Cen	7.00x19
Peerless St. 8	Link	Aut-L	Aut-L	Rock	War-G 3	—	——	—	Bendix	Ross	S 56⅛	——	——	——
Peerless Master 8	Link	Aut-L	*Aut-L	Rock	War-G 4	Spic	Sal ½	4.45	Bendix	Ross	S 60	Rub	Alem	6.00x31
Peerless Custom 8	Link	Aut-L	*Aut-L	Rock	War-G 4	Spic	Sal ½	4.45	Bendix	Ross	S 60	Rub	Alem	6.50x31
Pierce-Arrow 132	Chain	Del-R	Del-R	Long	Own 4	Spic	Own ½	4.42	Bendix	Gem	S 60	Faf	Alem	6.50x19
Pierce-Arrow 125	Chain	Del-R	Del-R	Long	Own 4	Spic	Own ½	4.42	Bendix	Gem	S 60	Faf	Alem	7.00x18
Pierce-Arrow 126	Chain	Del-R	Del-R	Long	Own 4	Spic	Own ½	4.42	Bendix	Gem	S 60	Faf	Alem	7.00x18
Plymouth	Cel	Del-R	*Del-R	Rock	Own 3	Own	Own ½	4.3	H	War	S 53⅝	Tryon	Al-Z	4.75x19
Pontiac	Chain	Del-R	Del-R	Own	Own 3	M M	Own ½	4.42	M	Sag	S 54	Tryon	Al-Z	5.00x29
Reo 15	Link	Del-R	Del-R	Borg	War-G 3	Spic	Sal ½	4.45	H	Ross	S 55	Rub B	Al-Z	5.50x18
Reo 20	Chain	Del-R	Del-R	Russ	Own 3	Detr	Own ½	4.07	H	Ross	S 55	Rub	Al-Z	6.00x18
Reo 25	Chain	Del-R	Del-R	Long	Own 3	Detr	Own ½	4.42	H	Ross	S 55	Rub	Al-Z	6.50x18
Ruxton (Fr. Wh. Dr.)	Link	Aut-L	Aut-L	Long	Own 3	Own	Own	4.25	H	Gem	S 55	Own	Alem	31x6.00
Studebaker Dict. 6	Whit	Del-R	Del-R	Long	War-G 3	Spic	Own ½	4.78	Bendix	Ross	S 54	Own	Alem	5.50x19
Studebaker Dict. 8	Var G	Del-R	Del-R	Long	War-G 3	Spic	Own ½	5.11	Bendix	Ross	S 54	Own	Al-Z	5.50x19
Studebaker Com. 6	Whit	Del-R	Del-R	Long	War-G 3	Spic	Own ½	3.91	Bendix	Ross	S 54	Faf	Al-Z	5.50x19
Studebaker Com. 8	Var G	Del-R	Del-R	Long	War-G 3	Spic	Own ½	4.7	Bendix	Ross	S 54	Faf	Al-Z	5.50x19
Studebaker Pres. 8	Var G	Del-R	Del-R	Long	Own 3	Spic	Own ½	4.31	Bendix	Ross	S 60	Faf	Al-Z	*6.00x20
Stutz M	Link	Del-R	Del-R	Borg	Detr 4	M M	Tim ½	4.5	H	Gem	S 62¼	Own	Bijur	32x7.00
Viking Eight	Whit	Del-R	Del-R	Borg	Mun 3	M M	Own ¾	4.63	Bendix	Sag	S 58	Tryon	Alem	6.00x30
Windsor 6-69	Chain	Aut-L	*Aut-L	Borg	War-G 3	M M	Col ½	4.9	H	Ross	S 54	O-N	Alem	29x5.25
Windsor 6-72	Link	Del-R	*Del-R	Borg	War-G 3	M M	Col ½	4.9	H	Ross	S 54	O-N	Alem	29x5.50
Windsor 6-77	Link	Del-R	*Del-R	Borg	War-G 4	M M	Col ½	3.9	H	Ross	S 54	O-N	Alem	29x5.50
Windsor 8-85	Link	Del-R	*Del-R	Borg	War-G 3	M M	Col ½	4.63	H	Ross	S 54	Own	Alem	31x6.00
Windsor 8-92	Link	Del-R	*Del-R	Borg	War-G 4	M M	Col ½	3.9	H	Ross	S 54	Own	Alem	31x6.50
Whippet 96 A	Var	Aut-L	*Aut-L	Borg	Own 3	M M	Own ½	4.55	*Bendix	Own	S 49½	Tryon	Alem	4.75x28
Whippet 98 A	Var	Aut-L	*Aut-L	Rock	Own 3	M M	Own ½	4.55	*Bendix	Own	S 53	Tryon	Alem	29x5.00
Willys Six 98 B	Var	Aut-L	*Aut-L	Borg	Own 3	M M	Own ½	4.09	Bendix	Own	S 49¾	Tryon	Alem	5.00x29
Willys-Knight 66 B	Var	N E	*N E	Rock	Own 3	M M	Own ½	4.6	Bendix	Ross	S 57½	Own	Bijur	6.00x31
Willys-Knight 70 B	Link	Aut-L	*Aut-L	Rock	Own 3	M M	Own ½	4.89	*Bendix	Own	S 53	Tryon	Alem	5.50x29

Rear Springs—S, semi-elliptic; El, full elliptic.

Spring Shackles—Tryon, Tryon Spring Shackle Company; Rub B, rubber block; Sil B, silent block; Faf, Fafnir; O-N, Henry Mfg. Co., Moline, Ill.

Chassis Lubricator—Alem, Alemite; Al-Z, Alemite Zerk; Bijur, Bijur chassis lubricator; Cen, central magazine.

Tires—*Studebaker 135-in. chassis 19x6.50.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Service Notes

Mason City, Ia., April 11.—The A and C Tire Shop, 109 South Delaware Ave., has opened with J. G. Fell, manager. The new firm is handling Fisk tires and tubes and will operate a general vulcanizing and repair service. The company is occupying the former North Iowa Motor Company, which has been remodeled for expansion of machine equipment and to provide a drive-in service.

Buffalo, N. Y., April 11.—Raymond E. Alexander, 29 Minor Street, has acquired the business of the Aluks Auto Wash and Service Station and will continue its operation under that name.

Beaver Falls, Pa., April 11.—A Dunlop tire and battery store has been opened here as a direct factory outlet by the Dunlop Tire and Rubber Company. Allan N. Cline has been appointed as manager of the new store, located at 9th Street and 7th Avenue, Beaver Falls.

Miami, Fla., April 11.—General Auto Sales, Inc., which proposes to deal in automobiles and accessories, has been organized here with a capital of $5,000. The board of directors is composed of S. V. Buss, D. B. Peixotto and T. C. Farmer, Jr.

NOTICE

Please see the fifth column to the left of this advertisement giving steering gear information. Notice the outstanding Ross predominance. The actual figures are:

ROSS

47

NEAREST Competitor

19

SECOND Competitor

8

THIRD Competitor

7

Build Their Own

14

ROSS CAM AND LEVER steering gears predominate not only in passenger car field, but in truck and bus fields as well.

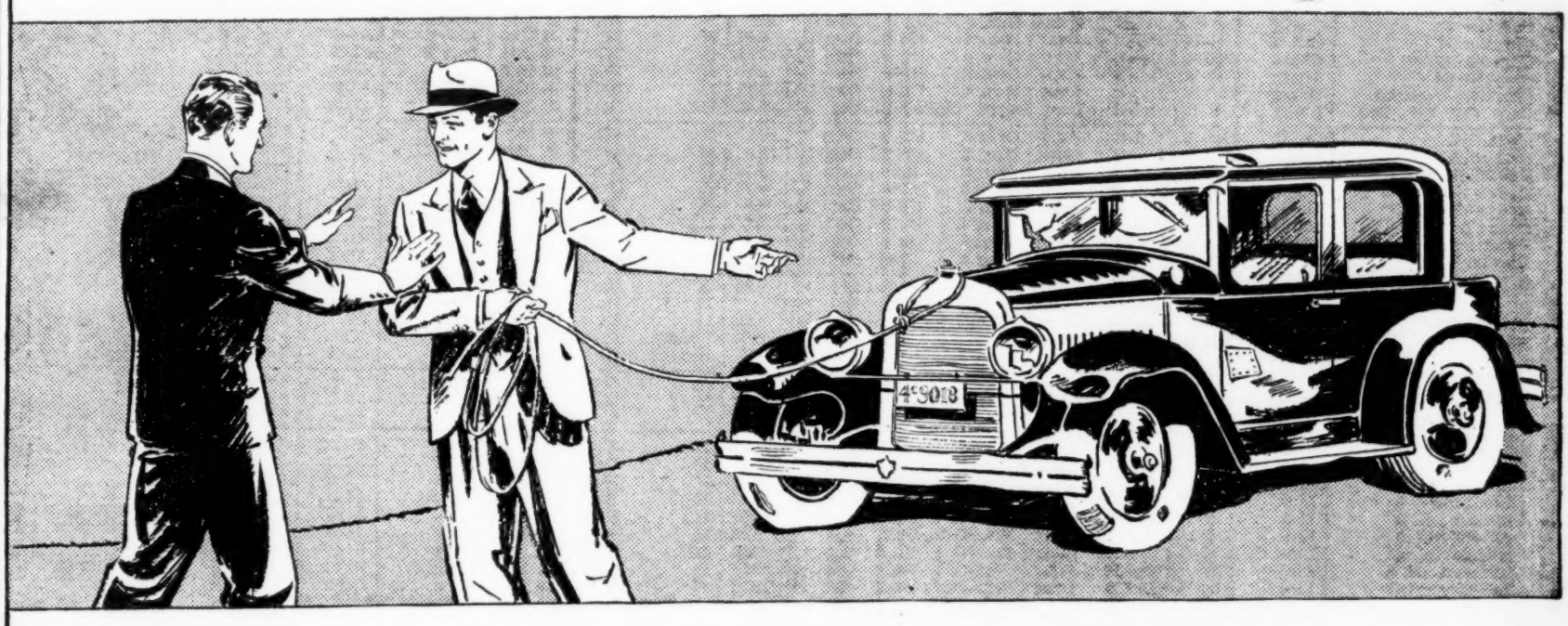
ROSS GEAR & TOOL CO.
Lafayette, Indiana

ROSS
Cam & Lever
Steering

There is only one CAM & LEVER *Steering Gear*

AMERICAN AUSTIN

the bantam–car…that will



save you a lot of horse trading

How to avoid this horsetrade swapping that puts another sales problem on the used-car floor when you sell a new car?

The American Austin supplies the answer. It makes two-car families bloom where one-car families grew before. It leaves the ownership of the old car undisturbed, keeps trade-ins off the selling floor—and off the dealer's mind.

"Save money *with* a second car" is the Austin story. Keep the big car for all-family use but save money with Austin on the many one and two passenger trips. They cost *so* much with a big car and *so* little with the Austin. Thus Austin pays for itself, helps to pay for its garage-mate and gives two car convenience with one car economy.

Three-quarters of a cent a mile pays for gas, oil and tires. Yet here is smartness, speed, comfort, convenience—everything that the American public demands from a car.

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